LELAND STANFORD JUNIOR UNIVERSITY

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STANFORD UNIVERSITY, CALIFORNIA
PUBLISHED BY THE UNIVERSITY

LELAND STANFORD JUNIOR UNIVERSITY

EIGHTEENTH

ANNUAL REGISTER

1908-09

"The beneficence of the Creator towards man on earth, and the possibilities of humanity, are one and the same."— LELAND STANFORD.

"A generous education is the birthright of every man and woman in America."

STANFORD UNIVERSITY, CALIFORNIA
PUBLISHED BY THE UNIVERSITY
JUNE, 1909

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OFFICE DIRECTORY

The office of the President is room 112.
The office of the Registrar is room 116.
The office of the Dean of Women is room 203.
The office of the Secretary to the President is room 113.
The office of the Treasurer is room 250.
The office of the Committee on Public Health is room 95.

The various Departmental offices are given in the Schedule and in the Directory of Officers and Students.

The University Post, Telegraph, and Telephone Office is *Stanford University, California.*

The University Railway Station and Express Office is *Palo Alto, California.*

Requests for *Registers,* blanks, and other printed matter, and inquiries regarding terms of admission, advanced standing, etc., should be addressed to The Registrar, *Stanford University, California.*

[The rooms in the Inner Quadrangle are numbered consecutively, beginning at the left of the main entrance, ten numbers being allotted to each building. In the Outer Quadrangle forty numbers are allotted to each of the large buildings and ten numbers to each one-story building, beginning with the Assembly Hall and number 120. The engineering buildings south of the Quadrangles begin with number 500. The Chemistry building is on the west avenue between the Quadrangles and the Museum.]

UNIVERSITY CALENDAR

1908

Aug.	27	Thursday ..... Entrance Examinations begin.
Sept.	6	Friday ..... Conferring of Degrees.
Dec.	12-18	Saturday-Friday .. End-Semester Examinations.

1909

Jan.	5	Tuesday ..... Registration for Second Semester.
Jan.	6	Wednesday ..... Instruction begins.
Jan.	8	Friday ..... Mid-Year Conferring of Degrees.
Mar.	9	Monday ..... Founders' Day.
Mar.	27	Saturday ..... } Mid-Semester Recess.
April	4	Sunday ..... }
May	7-13	Friday-Thursday . End-Semester Examinations.
May	14	Friday ..... Birthday of Leland Stanford, Jr.
May	19	Wednesday ..... Commencement.

Aug.	25	Wednesday ..... Birthday of Jane Lathrop Stanford.
Aug.	26	Thursday ..... Entrance Examinations begin.
Aug.	31	Tuesday ..... Registration of Matriculated Students.
Sept.	1	Wednesday ..... Registration of New Students.
Sept.	2	Thursday ..... Instruction begins.
Sept.	10	Friday ..... Conferring of Degrees.
Nov.	25	Thursday ..... } Thanksgiving Recess.
Nov.	28	Sunday ..... }
Dec.	11-17	Saturday-Friday .. End-Semester Examinations.

1910

Jan.	11	Tuesday ..... Registration for Second Semester.
Jan.	12	Wednesday ..... Instruction begins.
Jan.	14	Friday ..... Mid-Year Conferring of Degrees.
Feb.	22	Tuesday ..... Washington's Birthday.
Mar.	9	Wednesday ..... Founders' Day.
Mar.	26	Saturday ..... } Mid-Semester Recess.
April	3	Sunday ..... }
May	14	Saturday ..... Birthday of Leland Stanford, Jr.
May	13-19	Friday-Thursday . End-Semester Examinations.
May	23	Sunday ..... Baccalaureate Sunday.
May	24	Monday ..... Class Day.
May	25	Wednesday ..... Commencement.

BOARD OF TRUSTEES

LIFE TRUSTEES	Date of Appointment
HORACE DAVIS	1885
TIMOTHY HOPKINS	1885
GEORGE EDWARD GRAY	1885
JOSEPH DONOHOE GRANT	1891
SAMUEL FRANKLIN LEIB	1891
LEON SLOSS	1891
THOMAS WELTON STANFORD	1893
FRANK MILLER	1893
CHARLES GARDNER LATHROP	1893

ELECTIVE TRUSTEES	Term Expires
*WHITELAW REID	1912
*GEORGE EDWARD CROTHERS	1912
WILLIAM BABCOCK	1915
CHARLES P. EELLS	1915
VANDERLYNN STOW	1916
JAMES LEROY NICKEL	1919

For Directory of Officers and Committees of the Board, see index.

*Appointed by Mrs. Stanford under ten-year term plan.

OFFICERS OF INSTRUCTION AND ADMINISTRATION*

DAVID STARR JORDAN, President of the University.

M. S., Cornell University, 1872; M. D., Indiana Medical College, 1875; Ph. D., Butler College, 1878; LL. D., Cornell University, 1886, Johns Hopkins University, 1902, Illinois College, 1903; Instructor in Botany, Cornell University, 1871-72; Professor of Natural History, Lombard University, 1872-73; Principal of Appleton (Wis.) Collegiate Institute, 1873-74; Lecturer in Marine Botany at Penikese, 1873-74; Teacher of Natural History, Indianapolis High School, 1874-75; Professor of Biology, Butler College, 1875-79; Instructor in Botany, Harvard Summer School, Cumberland Gap, 1875-76; Assistant to U. S. Fish Commission, 1877-91; Professor of Zoology, Indiana University, 1879-85; President of Indiana University, 1885-91; President of the California Academy of Sciences, 1896-98, 1901-03, 1908; U. S. Commissioner in charge of Fur Seal Investigations, 1896-98, of Salmon Investigations, 1904; International Commissioner of Fisheries, since 1908; President of the American Association for the Advancement of Science, 1908-09.

JOHN CASPER BRANNER, Vice-President and Professor of Geology.

B. S., Cornell University, 1882; Ph. D., Indiana University, 1885; LL. D., University of Arkansas, 1897, Maryville College, 1909. Assistant Geologist, Imperial Geological Survey of Brazil, 1875-78; Special Botanist in South America, 1880-81; Special Agent of the U. S. Department of Agriculture for Investigating Cotton and the Insects affecting it in Brazil, 1882-83; Topographical Geologist of the Geological Survey of Pennsylvania, Anthracite District, 1883-85; Professor of Geology, Indiana University, 1885-91; State Geologist of Arkansas, 1887-92; President Geological Society of America, 1904; Member California Earthquake Investigation Commission, 1906-07; Special Assistant, Geological Survey of Brazil, 1907-08.

OLIVER PEEBLES JENKINS, Professor of Physiology and Histology.

A. B., Moore's Hill College, 1869, A. M., 1872; M. S., Indiana University, 1886, Ph. D., 1889. Professor of Natural Science, Moore's Hill College, 1876-82; Professor of Natural Science, Indiana State Normal School, 1883-86; Professor of Biology, De Pauw University, 1886-91.

MELVILLE BEST ANDERSON, Professor of English Literature.

A. M., Butler University, 1877; LL. D., University of Aberdeen, 1906. Professor of Modern Languages, Butler University, 1877-80; Professor of English Literature, Knox College, 1881-86; Professor of Literature and History, Purdue University, 1886-87; Professor of the English Language and Literature, University of Iowa, 1887-91.

JOHN MAXSON STILLMAN, Professor of Chemistry.

Ph. B., University of California, 1874, Ph. D., 1885. Assistant in Chemistry, University of California, 1873-75; Student in Chemistry, Strassburg and Würzburg, 1875-76; Instructor in Organic and General Chemistry, University of California, 1876-82; Chemist of the Boston and American Sugar Refining Companies, 1882-91.

* Arranged in groups in the order of seniority of appointment. For Directory of Officers, see index.

FERNANDO SANFORD, Professor of Physics.

B. S., Carthage College, 1879, M. S., 1882. Student, University of Berlin, 1886-88; Professor of Physical Science, Mt. Morris College, 1879-82; Superintendent of Schools, Ogle County, Ill., 1882-86; Instructor in Physics and Chemistry, Englewood (Ill.), High School, 1888-90; Professor of Physical Science, Lake Forest University, 1890-91.

CHARLES DAVID MARX, Professor of Civil Engineering.

B. C. E., Cornell University, 1878; C. E., Karlsruhe Polytechnicum, 1881. Instructor in Civil Engineering, Karlsruhe Polytechnicum, 1880-81; U. S. Assistant Engineer, Missouri River Improvement, 1882-84; Assistant Professor of Civil Engineering, Cornell University, 1884-90; Professor of Civil Engineering, University of Wisconsin, 1890-91.

CHARLES HENRY GILBERT, Professor of Zoology.

B. S., Butler University, 1879; M. S., Indiana University, 1882, Ph. D., 1883; Assistant in Natural Sciences and Modern Languages, Indiana University, 1880-84; Professor of Natural History, University of Cincinnati, 1884-89; Professor of Zoology, Indiana University, 1889-91; Assistant to the U. S. Bureau of Fisheries since 1880.

DOUGLAS HOUGHTON CAMPBELL, Professor of Botany.

Ph. M., University of Michigan, 1882, Ph. D., 1886. Teacher of Biology, Detroit High School, 1882-86; Student at Bonn, Tübingen, and Berlin, 1886-88; Professor of Botany, Indiana University, 1888-91.

EWALD FLÜGEL, Professor of English Philology.

Ph. D., University of Leipzig, 1886. Student, Universities of Freiburg and Leipzig, 1882-88; Privat Docent, University of Leipzig, 1888-92.

CHARLES BENJAMIN WING, Professor of Structural Engineering.

C. E., Cornell University, 1886. Fellow in Civil Engineering, Cornell University, 1886-87, Instructor, 1887-90. Assistant Professor, 1890-91; Engineer, Pompton (N. J.) Powder Co., 1887, Phoenix Powder Co., Farmingdale, N. Y., 1888; Assistant Engineer, Berlin (Conn.) Iron Bridge Co., 1889-90; Professor of Bridge and Hydraulic Engineering, University of Wisconsin, 1891-92.

FRANK ANGELL, Professor of Psychology.

B. S., University of Vermont, 1878; Ph. D., University of Leipzig, 1891; L. H. D., University of Vermont, 1892. Teacher in Washington (D. C.) High School, 1880-87; Assistant Professor of Psychology, Cornell University, 1891-92.

LEANDER MILLER HOSKINS, Professor of Applied Mathematics.

B. C. E. and B. S., University of Wisconsin, 1883, M. S., 1885, C. E., 1887. Instructor in Engineering, University of Wisconsin, 1885-89, Assistant Professor of Mechanics, 1889-91, Professor of Theoretical and Applied Mechanics, 1891-92.

ROBERT EDGAR ALLARDICE, Professor of Mathematics.

A. M., University of Edinburgh, 1882. Baxter Scholar in Mathematics, University of Edinburgh, 1882-83, Drummond Scholar in Mathematics, 1883-84; Assistant Professor of Mathematics, University of Edinburgh, 1883-92.

WILLIAM RUSSELL DUDLEY, Professor of Botany.

B. S., Cornell University, 1874, M. S., 1876. Student, Summer School, Penikese, 1874, Harvard University, 1876, Universities of Strassburg and Berlin, 1887-88; Instructor in Botany, Cornell University, 1872-76, Assistant Professor, 1876-92.

AUGUSTUS TABER MURRAY, Professor of Greek.

A. B., Haverford College, 1885; Ph. D., Johns Hopkins University, 1890. Fellow in Johns Hopkins University, 1887-88; Professor of Greek, Earlham College, 1888-90; Student, Universities of Leipzig and Berlin, 1890-91; Professor of Greek, Colorado College, 1891-92.

JOHN ERNST MATZKE, Professor of Romanic Languages.

A. B., Hope College, 1882; Ph. D., Johns Hopkins University, 1888. Professor of French, Bowdoin College, 1889-00; Professor of the Romanic Languages, Indiana University, 1890-91; Associate in the Romanic Languages, Johns Hopkins University, 1891-93.

JAMES OWEN GRIFFIN, Professor of German.

Graduate of the Pennsylvania State Normal School, 1873. Teacher in Pennsylvania State Normal School, 1873-74; Principal, Unadilla (N. Y.) Academy, 1874-79; Student, University of Göttingen, 1879-80; Principal of Delaware Academy (Delhi, N. Y.), 1880-85; Instructor in German, Cornell University, 1885-91, Registrar, 1890-91.

RUFUS LOT GREEN, Professor of Mathematics.

B. S., Indiana University, 1885, A. M., 1889. Instructor in Mathematics, Indiana University, 1885-86, Assistant Professor, 1886-88, Associate Professor, 1888-91, Professor of Pure Mathematics, 1891-93; Student, Johns Hopkins University, 1886-87.

†ARLEY BARTHLOW SHOW, Professor of Mediæval History.

A. B., Doane College, 1882; Graduate, Andover Theological Seminary, 1885; A. M., Doane College, 1892. Pastor Congregational Church, Waco, Neb., 1885-87; Professor of History and English Literature, Doane College, 1887-92; Student, University of Leipzig, 1900-01; Lecturer on History of the Early Church, Pacific Theological Seminary, Oakland, 1905-07.

ORRIN LESLIE ELLIOTT, Registrar.

Ph. B., Cornell University, 1885, Ph. D., 1890. Fellow in History and Political Science, Cornell University, 1885-86, Instructor in English, 1886-91, Assistant Registrar and President's Secretary, 1890-91.

†VERNON LYMAN KELLOGG, Professor of Entomology and Lecturer in Bionomics.

B. S., University of Kansas, 1889, M. S., 1892. Student, Cornell University, 1891, University of Leipzig, 1893; Assistant Professor of Entomology, University of Kansas, 1890-93, Associate Professor, 1893-94.

JAMES PERRIN SMITH, Professor of Paleontology.

A. B., Wofford College, 1884; A. M., Vanderbilt University, 1886; Ph. D., University of Göttingen, 1892. Assistant Geologist and Chemist, Arkansas Geological Survey, 1887-90; Assistant Geologist, U. S. Geological Survey, 1895-1906, Geologist since 1906.

LIONEL REMOND LENOX, Professor of Analytical Chemistry.

Ph. B., Columbia College, 1888. Assistant Chemist, Bethlehem Iron Co., 1887; Instructor in Chemistry, Lehigh University, 1888-91; Chemist, Ordnance Department, U. S. N., Washington (D. C.), 1891-92.

HENRY RUSHTON FAIRCLOUGH, Professor of Latin.

A. B., University of Toronto, 1883, A. M., 1886; Ph. D., Johns Hopkins University, 1896. Fellow in Classics, University College, Toronto, 1883-84; Classical and English Master, Brockville High School, 1884-86; Graduate Scholar, Johns Hopkins University, 1886-87, Fellow, 1887; Lecturer in Greek and Ancient History, University College, Toronto, 1887-93; Professor of Latin, University of Wisconsin, Summer Session, 1906, Columbia University, Summer Session, 1908.

WILLIAM FREDERICK DURAND, Professor of Mechanical Engineering.

Graduate U. S. Naval Academy, 1880; Ph. D., Lafayette College, 1888. Engineer Corps, U. S. Navy, 1880-87; Special Duty as Assistant Professor of

†Absent on leave, 1908-09

Mechanical Engineering, Lafayette College, 1883-85, Worcester Polytechnic Institute, 1887; Professor of Mechanics and Superintendent of Mechanical Department, Michigan State Agricultural and Mechanical College, 1887-91; Professor of Marine Engineering and Principal Graduate School of Naval Architecture and Marine Engineering, Cornell University, 1891-1904.

HARRIS JOSEPH RYAN, Professor of Electrical Engineering.

M. E., Cornell University, 1887. With Western Engineering Co., Lincoln, Neb., 1887-88; Instructor in Physics, Cornell University, 1888-89, Assistant Professor of Electrical Engineering, 1889-92, Associate Professor, 1892-95, Professor, 1895-1905; Judge, Board of Awards, World's Fair, Chicago, 1893; U. S. Government Delegate, International Electrical Congress, St. Louis Exposition, 1904.

GEORGE HEMPL, Professor of Germanic Philology.

A. B., University of Michigan, 1879; Ph. D., University of Jena, 1889; LL. D., University of Wisconsin, 1904. Principal, Saginaw (Mich.) H. S., 1879-82, La Porte (Ind.) H. S., 1882-84; Instructor in German, Johns Hopkins University, 1884-86; Student, Universities of Göttingen, Tübingen, Strassburg, Jena, and Berlin, 1886-89; Assistant Professor of English, University of Michigan, 1889-93, Junior Professor, 1893-97, Professor of English Philology and General Linguistics, 1897-1906; Professor of English, University of Chicago, Summer Quarter, 1897; President of the American Dialect Society, 1900-05; President of the Modern Language Association, 1902-03; President of the American Philological Association, 1903-04.

EPHRAIM DOUGLASS ADAMS, Professor of History.

A. B., University of Michigan, 1887, Ph. D., 1890. Principal of High School, McGregor (Ia.), 1887; Principal of High School, Saginaw (Mich.), 1889; Special Agent in Charge of Street Railways, Eleventh Census, Washington (D. C.), 1890; Assistant Professor and afterward Professor of European History, University of Kansas, 1891-1902.

EDWARD CURTIS FRANKLIN, Professor of Organic Chemistry.

B. S., University of Kansas, 1888, M. S., 1890; Ph. D., Johns Hopkins University, 1894. Chemist to the Palo Alto Plantation and Sugar Factory, Donaldsonville (La.), 1888; Chemist to the Bella Vista Mining and Milling Co., Los Quemados, Costa Rica, 1897; Instructor in Chemistry, University of Kansas, 1888-90; Student, University of Berlin, 1890-91; Assistant in Chemistry, University of Kansas, 1891-93; Associate Professor, 1894-99, Professor of Physical Chemistry, 1899-1903; Member of the U. S. Assay Commission, 1907.

ELLWOOD PATTERSON CUBBERLEY, Professor of Education.

A. B., Indiana University, 1891; A. M., Columbia University, 1902, Ph. D., 1905. Instructor in Science, Ridgeville College (Ind.), 1891; Professor of Physical Science, Vincennes University (Ind.), 1891-93, President, 1893-96; Superintendent of City Schools, San Diego (Cal.), 1896-98; Honorary Fellow, Columbia University, 1901-02, 1904-05.

ALPHONSO GERALD NEWCOMER, Professor of English.

A. B., University of Michigan, 1887; A. M., Cornell University, 1888. Fellow in Classics, Cornell University, 1887-88; Principal, Mt. Morris (Ill.) H. S., 1888-89; Instructor in Latin and French, Knox College, 1889-91.

CHARLES HENRY HUBERICH, Professor of Law.

LL. B., University of Texas, 1897, LL. M., 1898; D. C. L., Yale University, 1899; J. U. D., University of Heidelberg, 1905; LL. D., University of Melbourne, 1907. Student, Universities of Berlin and Heidelberg, 1899-1900; Instructor in Political Science and Law, University of Texas, 1900-03, Adjunct Professor, 1903-05; Professor of Law, University of Chicago, Summer Session, 1907.

STEWART WOODFORD YOUNG, Professor of Physical Chemistry.

B. S., Cornell University, 1890. Assistant in Chemistry, Cornell University, 1890-91; Instructor in Chemistry, Swarthmore College, 1891-93.

FREDERIC CAMPBELL WOODWARD, Professor of Law.

LL. B., Cornell University, 1894, LL. M., 1895; A. M., Dickinson College, 1902. Attorney at Law, practicing in New York City, 1895-98; Professor of Law, Dickinson College, 1898-1902; Professor of Law, Northwestern University, 1902-07; Professor of Law, University of Chicago, Summer Quarter, 1908.

†JOHN CHARLES LOUNSBURY FISH, Professor of Railroad Engineering.

C. E., Cornell University, 1802. Instructor in Civil Engineering, Cornell University, 1892-93; Division Engineer, Lake Shore and Michigan Southern Railway, 1906-08.

ALLYN ABBOTT YOUNG, Professor of Economics.

Ph. B., Hiram College, 1894; Ph. D., University of Wisconsin, 1902. Student Clerk, United States Census, 1899-1900; University Fellow in Economics, University of Wisconsin, 1900-01, Instructor, 1901-02; Instructor in Economics, Western Reserve University, 1902-04, Associate Professor, 1904; Assistant Professor of Finance, Dartmouth College, 1904-05; Assistant Professor of Economics, University of Wisconsin, 1905-06.

JOHN ANDREW BERGSTRÖM, Professor of Education.

A. B., Wesleyan University, 1890; Ph. D., Clark University, 1894. Assistant Professor of Psychology and Pedagogy, Indiana University, 1894-96, Associate Professor, 1896-1902, Professor, 1902-08.

BURT ESTES HOWARD, Professor of Political Science.

A. B., Western Reserve University, 1883. A. M., 1886; A. M., Harvard University, 1900; Ph. D., University of Heidelberg, 1903. Student, University of Berlin, 1903-04; Assistant Professor of Political Science, Leland Stanford Junior University, 1900-01, Acting Associate Professor, 1901-02.

ADOLPH BARKAN, Professor of Structure and Diseases of the Eye, Ear, and Larynx.

M. D., University of Vienna, 1866; LL. D., University of Glasgow, 1901. Professor of Ophthalmology and Otology, Medical Department, University of the Pacific, 1872-82, Cooper Medical College, since 1882; Member of the Heidelberg Ophthalmological Society; Member of the Otological Society of Germany; Eye and Ear Surgeon, Lane Hospital, since 1895.

HENRY GIBBONS, JR., Professor of Obstetrics.

M. D., University of the Pacific, 1863; A. M., 1891. Dean of the Medical Department of the University of the Pacific, 1870-82, Professor of Materia Medica, 1870-73, of Obstetrics and Diseases of Women and Children, 1873-82; Dean of Cooper Medical College and Professor of Obstetrics and Diseases of Women and Children, since 1882; President of the State Medical Society of California, 1896; Visiting Obstetrician to Lane Hospital since 1895; Member of American Association of Obstetricians and Gynecologists.

JOSEPH OAKLAND HIRSCHFELDER, Professor of Clinical Medicine.

M. D., University of Leipzig, 1876. Professor of Materia Medica, Medical College of the Pacific, 1877-81, Professor of Clinical Medicine, 1881-82; Professor of Clinical Medicine, Cooper Medical College, since 1882; Visiting Physician, City and County Hospital of San Francisco, since 1878; Visiting Physician, Lane Hospital, since 1895.

STANLEY STILLMAN, Professor of Surgery.

M. D., Cooper Medical College, 1889. Adjunct Professor of Surgery, Cooper Medical College, 1895-98, Professor of Surgery, since 1898; Assistant Visiting Surgeon, City and County Hospital, San Francisco, 1891-99, Visiting Surgeon, since 1899; Visiting Surgeon, Lane Hospital, since 1895; Fellow of the American Surgical Association.

† Absent on leave, first semester, 1908-09.

EMMET RIXFORD, Professor of Surgery.

B. S., University of California, 1887; M. D., Cooper Medical College, 1891. Adjunct Professor of Surgery, Cooper Medical College, 1893-98, Professor, since 1898; Visiting Surgeon, Lane Hospital, 1895, City and County Hospital, San Francisco, since 1899; Fellow, American Surgical Association, 1901; Member Society of Clinical Surgery, 1903.

WILLIAM OPHÜLS, Professor of Pathology.

M. D., University of Göttingen, 1895. Assistant at the Pathologic Institute at Göttingen, 1896-97; Professor of Pathology and Bacteriology, University of Missouri, 1897-98; Professor of Pathology and Bacteriology, Cooper Medical College, since 1898; Pathologist, Lane Hospital, since 1898. Member of the Association of American Pathologists and Bacteriologists; Member of the Society for Experimental Biology and Medicine.

RAY LYMAN WILBUR, Professor of Clinical Medicine.

A. B., Leland Stanford Junior University, 1896, A. M., 1897; M. D., Cooper Medical College, 1899. Assistant in Physiology, Leland Stanford Junior University, 1894-96, Instructor, 1896-97, Assistant Professor, 1900-03; Lecturer and Demonstrator in Physiology, Cooper Medical College, 1899-1900.

*ARTHUR WILLIAM MEYER, Professor of Human Anatomy.

B. S., University of Wisconsin, 1898; M. D., Johns Hopkins University, 1905. Assistant and Instructor in Anatomy, Johns Hopkins University, 1905-07; Assistant Professor of Anatomy, University of Minnesota, 1907-08; Professor of Anatomy, Northwestern University, 1908-09.

*HERBERT EUGENE BOLTON, Professor of American History.

B. L., University of Wisconsin, 1895; Ph. D., University of Pennsylvania, 1899. Graduate Student, University of Wisconsin, 1896-97; Harrison Fellow in History, University of Pennsylvania, 1897-99; Teacher of History, State Normal School, Milwaukee, Wis., 1899-1901; Instructor in History, University of Texas, 1901-05; Adjunct Professor, 1905-08, Associate Professor, 1908-09; engaged in the archives of Mexico for the Department of Historical Research of the Carnegie Institution of Washington, D. C., 1907-08.

WILLIAM FITCH CHENEY, Clinical Professor of Diseases of the Digestive System.

B. L., University of California, 1885; M. D., Cooper Medical College, 1889; Post-graduate courses, Johns Hopkins Medical School, 1893; Professor of Principles and Practice of Medicine, Cooper Medical College, since 1898; First Lieutenant, Medical Reserve Corps, U. S. A., 1908. Member of the American Medical Association, and of The National Association for the Study and Prevention of Tuberculosis.

FRANK MACE McFARLAND, Professor of Histology.

Ph. B., De Pauw University, 1889; A. M., Leland Stanford, Jr., University, 1893; Ph. D., University of Würzburg, 1896. Professor of Biology and Geology, Olivet College, 1889-92; Student, Würzburg, Zürich, and Naples, 1894-96.

JOHN FLESHER NEWSOM, Professor of Mining.

A. B., Indiana University, 1891; A. M., Leland Stanford Jr. University, 1892, Ph. D., 1901. Assistant, Arkansas Geological Survey, 1891-95; Instructor in Geology, Indiana University, 1894-96, Assistant Professor, 1896-98.

HAROLD HEATH, Professor of Zoology.

A. B., Ohio Wesleyan University, 1893; Ph. D., University of Pennsylvania, 1898. Assistant in Biology, Ohio Wesleyan University, 1891-93; Professor of Biology, University of the Pacific, 1893-94; Harrison Fellow in Zoology, University of Pennsylvania, 1896-98.

*Beginning September, 1909.

ARTHUR MARTIN CATHCART, Professor of Law.

A. B., Leland Stanford Jr. University, 1896. Student, Harvard University, 1896-97; Registered Office Clerk with Attorneys of Colorado Supreme Court, 1900-02; Attorney at Law, Colorado Springs (Colo.), 1903-04.

JAMES FARLEY McCLELLAND, Professor of Mining.

E. M., Columbia University, 1900. Instructor in Geology and Mining, University of Wyoming, 1900-01; with Indiana Gold Dredging Co., Oroville (Cal.), 1901-02; Instructor in Mining, Columbia University, 1902-05; General Mining Practice, Tonopah (Nev.), 1905-08; Lecturer in Mining, Yale University, spring term, 1908, 1909.

WESLEY NEWCOMB HOHFELD, Professor of Law.

A. B., University of California, 1901; LL. B., Harvard University, 1904. Attorney at Law, San Francisco, 1904-05; Instructor, Hastings College of Law, University of California, 1905; Member of Faculty of Law, University of California, Summer Session, 1907; Member of Faculty of Law, University of Chicago, Summer Quarter, 1908.

GUIDO HUGO MARX, Professor of Mechanical Engineering.

M. E., Cornell University, 1893. With Gleason Tool Co., Rochester (N. Y.), 1893-94; with Bement, Miles & Co., Philadelphia, 1894-95.

HENRY WALDGRAVE STUART, Professor of Philosophy.

Ph. B., University of California, 1893; Ph. D., University of Chicago, 1900. Teacher, Hollister (Cal.) H. S., 1893-94; Fellow in Political Economy, University of Chicago, 1894-96; Instructor (pro tem) in Economics and Psychology, Washington University, St. Louis, 1896-97; Teacher, Central School, Oakland (Cal.), 1897-98; Principal, Woodland (Cal.) H. S., 1898-99; Fellow in Philosophy, University of Chicago, 1899-1900; Instructor in Economics and History, Ripon College, 1900-01; Instructor in Philosophy, State University of Iowa, 1901-04; Acting Professor of Philosophy, Lake Forest College, 1904-05, Assistant Professor, 1905-07.

‡JESSE MACY, Acting Professor of History.

A. B., Iowa College, 1870; LL. D., Brown University, 1898. Principal, Grinnell Academy, 1871-84; Professor of History and Political Science, Iowa College, 1885-89, of Political Science, since 1889.

‡JAMES ALBERT WOODBURN, Acting Professor of History.

A. B., Indiana University, 1876, A. M., 1885; Ph. D., Johns Hopkins University, 1890. Teacher in Preparatory School, Indiana University, 1878-87; Graduate Student, Johns Hopkins University, 1887-90, Fellow in History and Politics, 1889-90; Professor of American History and Politics, Indiana University, since 1890.

‡THOMAS SEWALL ADAMS, Acting Professor of Economics.

A. B., Johns Hopkins University, 1896, Ph. D., 1899. Scholar, Johns Hopkins University, 1897-98, Fellow, 1898-99; Student Clerk, United States Census, 1899-1900; Assistant to the Treasurer of Porto Rico, 1900-01; Assistant Professor of Finance and Statistics, University of Wisconsin, 1901-06, Associate Professor of Political Economy, 1906-08, Professor of Political Economy since 1908; Expert, Wisconsin Tax Commission, 1904-08; Expert, U. S. Bureau of Labor, 1908.

ARTHUR BRIDGMAN CLARK, Associate Professor of Graphic Arts.

B. Ar., Syracuse University, 1888, M. Ar., 1891. Director of Trade Schools and Instructor in Drawing, New York State Reformatory, Elmira (N. Y.), 1888-89; Instructor in Architecture, Syracuse University, 1889-92.

GEORGE CLINTON PRICE, Associate Professor of Zoology.

B. S., De Pauw University, 1890; Ph. D., Leland Stanford Jr. University, 1897. Student in Biology, Johns Hopkins University, 1890-92, University of Munich, 1895-96.

‡ Second semester, 1908-09.

GEORGE ARCHIBALD CLARK, Secretary to the President.

B. L., University of Minnesota, 1891. Secretary, U. S. Fur Seal Commission, 1896-98.

GEORGE JAMES PEIRCE, Associate Professor of Botany and Plant Physiology.

S. B., Harvard University, 1890; A. M. and Ph. D., University of Leipzig, 1894. Assistant in Botany, Harvard University and Radcliffe College, 1890-92; Parker Fellow in Harvard University, studying in Bonn, Leipzig, and Munich, 1892-94; Assistant Professor of Botany, Indiana University, 1895-97.

OLIVER MARTIN JOHNSTON, Associate Professor of Romanic Languages.

A. B., Mississippi College, 1890, A. M., 1892; Ph. D., Johns Hopkins University, 1896. Principal, Preparatory Department, Mississippi College, 1890-91, Professor of English, 1891-93; Fellow in Johns Hopkins University, 1895-96; Lecturer in French Philology, Byrn Mawr College, 1896-97.

†MELVIN GILBERT DODGE, Associate Librarian.

A. B., Hamilton College, 1890, A. M., 1894. Librarian, Hamilton College, 1892-1901.

HENRY WINCHESTER ROLFE, Associate Professor of Greek.

A. B., Amherst College, 1880, A. M., 1885. Student, University of Leipzig, 1881-83; Instructor in English, Cornell University, 1883-85; Professor of Latin, Swarthmore College, 1885-90; Lecturer on Latin Literature to Post-graduate Students, University of Pennsylvania, 1891-92; University Extension Lecturer, 1891-1900.

DAVID CHARLES GARDNER, Chaplain.

Graduate, Church Divinity School of the Pacific, San Mateo, 1897. Curate, St. James Mission, San Francisco, 1898; Rector of All Saints Church, Palo Alto, 1898-1902.

WILLIAM FREEMAN SNOW, Associate Professor of Hygiene.

A. B., Leland Stanford Jr. University, 1896, A. M., 1897; M. D., Cooper Medical College, 1900. Student, Johns Hopkins Medical School, 1901-02.

HANS FREDERIK BLICHFELDT, Associate Professor of Mathematics.

A. B., Leland Stanford Jr. University, 1896; Ph. D., University of Leipzig, 1898.

THORSTEIN B. VEBLEN, Associate Professor of Economics.

A. B., Carleton College, 1880; Ph. D., Yale University, 1884. Graduate Student, Johns Hopkins University; Fellow in Economics and Finance, Cornell University, 1891-92; Fellow in Political Economy, University of Chicago, 1892-93, Reader, 1893-94, Associate, 1894-96, Instructor, 1896-1900, Assistant Professor, 1900-06.

ALBERT CONSER WHITAKER, Associate Professor of Economics.

A. B., Leland Stanford Jr. University, 1899; Ph. D., Columbia University, 1904. Scholar in Economics, Columbia University, 1899-1900, Fellow, 1900-01; Student, University of Berlin, 1901-02; Lecturer in Economics and Social Science, Columbia University, 1906-07.

ROBERT ECKLES SWAIN, Associate Professor of Chemistry.

A. B., Leland Stanford Jr. University, 1899; M. S., Yale University, 1901, Ph. D., 1904. Student, Universities of Strassburg and Heidelberg, 1901-02.

† Absent on leave, 1908-09; resigned, to take effect July 31, 1909.

GEORGE THOMAS CLARK, Librarian.

B. S., University of California, 1886. Assistant Librarian, University of California, 1886-87; Deputy State Librarian, California State Library, 1887-90, Classifier, 1890-94; Librarian, San Francisco Public Library, 1894-1907.

FREDERICK JOHN ROGERS, Associate Professor of Physics.

M. S., Cornell University, 1891. Instructor in Physics, Cornell University, 1892-1900.

KARL G. RENDTORFF, Associate Professor of German.

A. M., Leland Stanford Jr. University, 1894, Ph. D., 1896. Student, University of Giessen, 1884-85, University of Kiel, 1885-91.

LILLIEN JANE MARTIN, Associate Professor of Psychology.

A. B., Vassar College, 1880. Teacher of Science, Indianapolis High School, 1880-89; Vice-Principal and Head of Department of Science, Girls' High School, San Francisco, 1889-94; Student, University of Göttingen, 1894-98.

RAYMOND MACDONALD ALDEN, Associate Professor of English Literature and Rhetoric.

A. B., University of Pennsylvania, 1894; A. M., Harvard University, 1896; Ph. D., University of Pennsylvania, 1898. Instructor in English, Columbian University, Washington (D. C.), 1894-95; Assistant in English, Harvard University, 1896-97; Senior Fellow in English, University of Pennsylvania, 1898-99, Instructor, 1899-1901.

†WILLIAM ALPHA COOPER, Associate Professor of German.

A. B., Marietta College, 1892, A. M., 1897. Student, Universities of Bonn, Leipzig, and Paris, 1892-94; Instructor in German and French, Marietta College, 1895-99, Professor, 1899-1901.

WILLIAM RANKINE ECKART, Associate Professor of Mechanical Engineering.

M. E., Cornell University, 1895. Mechanical Engineer, Siemens Halske Electric Co., Chicago, 1895-96; Construction Engineer, Allison Ranch Mine, Grass Valley (Cal.), 1896-98; Testing Work for Fraser & Chalmers, in Hawaii and Mexico, 1898-99; with W. R. Eckart, Consulting Engineer, Hydraulic Power Plants and Mining Work, 1899-1903, summers of 1904-08; Consulting Engineer, Geary St. P. & O. R. R., San Francisco, 1902-06.

HALCOTT CADWALADER MORENO, Associate Professor of Applied Mathematics.

A. B., University of Georgia, 1893, A. M., 1894, B. L., 1896; Ph. D., Clark University, 1900. Tutor in Mathematics, University of Georgia, 1893-97; Scholar and Fellow in Mathematics, Clark University, 1897-1900; Assistant in Mathematics, Clark University, 1900-01.

CHARLES ANDREWS HUSTON, Associate Professor of Law.

A. B., University of Chicago, 1902, J. D., 1907. Fellow in Political Economy, University of Chicago, 1902-03, Assistant in Rhetoric, 1903-04, Associate in Rhetoric, 1904-06.

JOSEPH WALTER BINGHAM, Associate Professor of Law.

A. B., University of Chicago, 1902, J. D., 1904. In practice of law, Chicago, 1904-05; Acting Assistant Professor of Law, Cornell University, 1905-07.

†Absent on leave, 1908-09.

SIDNEY DEAN TOWNLEY, Associate Professor of Applied Mathematics.

B. S., University of Wisconsin, 1890, M. S., 1892; D. Sc., University of Michigan, 1897. Fellow in Astronomy, University of Wisconsin, 1890-91, Assistant in Astronomy and Mathematics, 1891-92; Hearst Fellow in Astronomy, University of California (Lick Observatory), 1892-93; Instructor in Astronomy, University of Michigan, 1893-95, 1896-98; Student, Universities of Berlin and Munich, 1895-96; Instructor in Practical Astronomy, University of California, 1898-1903, Lecturer in Astronomy, 1904-07; Astronomer in Charge of International Latitude Observatory, 1903-07.

‡EDWARD BENJAMIN KREHBIEL, Associate Professor of History.

A. B., University of Kansas, 1902; Ph. D., University of Chicago, 1906. Graduate Student, University of Chicago, 1902-06, Fellow, 1903-05, Assistant, 1904-06; Graduate Student, Harvard University, 1904; Student, École de Chartes, Paris, 1905; Instructor, University of Chicago High School, 1905-06; Associate in History, University of Chicago, 1906-07, Instructor, 1907-09.

COLBERT SEARLES, Assistant Professor of Romanic Languages.

A. B., Wesleyan University, 1895; Ph. D., University of Leipzig, 1899. Instructor in French and Italian, Indiana University, 1899-1900; Associate Professor of English and Modern Languages, University of Arkansas, 1900-01.

JEFFERSON ELMORE, Assistant Professor of Latin.

A. B., Leland Stanford Jr. University, 1895, A. M., 1895, Ph. D., 1901. Principal of Merced County High School, 1895-97; Student, Universities of Bonn and Berlin, 1901-02.

JOHN OTTERBEIN SNYDER, Assistant Professor of Zoology.

A. B., Leland Stanford Jr. University, 1897, A. M., 1899. Assistant, U. S. Fish Commission, 1897, 1899, 1904; Naturalist on U. S. S. Albatross engaged in deep sea investigations, 1902, 1906.

†HARRY ALVIN MILLIS, Assistant Professor of Economics.

A. B., Indiana University, 1895, A. M., 1896; Ph. D., University of Chicago, 1899. Reference Librarian, John Crerar Library, Chicago, 1899-1902; Professor of Economics and Sociology, University of Arkansas, 1902-03.

JAMES ROLLIN SLONAKER, Assistant Professor of Physiology.

B. S., University of Wisconsin, 1893; Ph. D., Clark University, 1896. Fellow in Biology, Clark University, 1893-96; United States Fish Commission, Woods Holl (Mass.), summer, 1895; Instructor in Zoology, Indiana University, 1896-99, Indiana University Biological Station, 1896-1900; Assistant Professor of Zoology, Indiana University, 1899-1901; Research Assistant in Neurology, University of Chicago, 1901-02, Associate in Neurology, 1902-03.

CLARA S. STOLTENBERG, Assistant Professor of Physiology.

A. B., Leland Stanford Jr. University, 1896, A. M., 1897.

SAMUEL SWAYZE SEWARD, Jr., Assistant Professor of English.

A. B., Columbia College, 1896; A. M., Columbia University, 1897. Scholar in Literature, Columbia University, 1896-97, Assistant in Literature, 1897-99; Student, Oxford University, 1899-1900; Acting Professor of English, University of Nevada, 1907; Assistant Professor of English, University of California, summer session, 1907.

BENJAMIN OLIVER FOSTER, Assistant Professor of Latin.

A. B., Leland Stanford Jr. University, 1895; A. M., Harvard University, 1897, Ph. D., 1899. Parker Fellow of Harvard University, studying in the American School of Classical Studies in Rome, 1899-1900; Acting Professor of Latin and Greek, State Normal College of Michigan, 1900-01; Instructor, University of California, Summer Session, 1908.

‡ Beginning September, 1909.
† Absent on leave, 1908-09.

*DORSEY ALFRED LYON, Assistant Professor of Metallurgy.

A. B., Leland Stanford Jr. University, 1898; A. M., Harvard University, 1902. Assistant in Chemistry, Leland Stanford Jr. University, 1897-98; Instructor in Geology, University of Washington, 1898-99, Assistant Professor of Mining and Metallurgy, 1899-1900, Professor of Mining and Metallurgy and Dean of the School of Mines, 1900-01; Graduate Student, Harvard University, 1901-02; with United States Smelting Co. (Utah), 1902.

HENRY LEWIN CANNON, Assistant Professor of History.

A. B., Western Reserve University, 1893; Ph. D., University of Pennsylvania, 1898. Student, Harvard University, 1893-94, Yale University, 1896-97; Fellow in European History, University of Pennsylvania, 1897-98; Instructor in History, University of Cincinnati, 1900-03.

HOWARD JUDSON HALL, Assistant Professor of English.

B. S., Michigan State Agricultural College, 1890; A. B., Leland Stanford Jr. University, 1896; A. M., Harvard University, 1900. Professor of English and Librarian, University of Arizona, 1891-1904.

AUSTIN FLINT ROGERS, Assistant Professor of Mineralogy and Petrography.

A. B., University of Kansas, 1899, A. M., 1900; Ph. D., Columbia University, 1902. Assistant in Mineralogy, University of Kansas, 1898-1900; Assistant Geologist, University Geological Survey of Kansas, 1898-1900, 1903; Fellow in Mineralogy, Columbia University, 1900-02, Tutor in Mineralogy, 1902-05.

MACY MILLMORE SKINNER, Assistant Professor of German.

A. B., Harvard University, 1894, A. M., 1895, Ph. D., 1897. Harvard Fellow, University of Strassburg, 1897-98, University of Berlin, 1898-99; Instructor in German, Harvard University, 1899-1905.

ELMER REGINALD DREW, Assistant Professor of Physics.

B. S., University of California, 1888; Ph. D., Cornell University, 1903. Student, University of Chicago, 1897-98, University of Berlin, 1903-05; Assistant in Physics, University of California, 1889-92, Instructor, 1892-1902.

LEE EMERSON BASSETT, Assistant Professor of English.

A. B., Leland Stanford Jr. University, 1901. Graduate Cumnock School of Oratory, Los Angeles, 1898; Instructor in Public Speaking, University of Southern California, 1898-99; Student, School of Expression, Boston, 1901; Student, Department of Literature, University of Chicago, summer, 1904; Student at Oxford, 1907-08.

†ERNEST WHITNEY MARTIN, Assistant Professor of Latin.

A. B., University of Chicago, 1900; A. M., Leland Stanford Jr. University, 1902. Instructor in Latin and Greek, Private School, Clarinda (Ia.), 1895-96; Principal of High School, 1896-98; Student, University of Berlin, and American School of Classical Studies, Rome, 1900-01.

HENRY DAVID GRAY, Assistant Professor of English.

Ph. B., Colgate University, 1897; A. M., Columbia University, 1898, Ph. D., 1904. Assistant in German and French, Colgate Academy, 1896-97; University Scholar, Columbia University, 1898-1900; Instructor in Dramatic Literature, American Academy of Dramatic Arts, 1900-02; Instructor in English, University of Texas, 1902-05; Lecturer in English, Columbia University, Summer Session, 1905.

WILLIAM DINSMORE BRIGGS, Assistant Professor of English.

A. B., Leland Stanford Jr. University, 1896; A. M., Harvard University, 1899, Ph. D., 1900. Student, Johns Hopkins University, 1896-97; Instructor in English and German, University of Vermont, 1900-01; Instructor in English, Western Reserve University, 1901-06.

* Resigned December, 1908.
† Absent on leave, 1908-09.

LEROY ABRAMS, Assistant Professor of Botany.

A. B., Leland Stanford Jr. University, 1899, A. M., 1902. Acting Professor of Botany, University of Idaho, 1899-1900; Assistant in Botany, Leland Stanford Jr. University, 1900-02, Instructor, 1902-04; Fellow in Botany, Columbia University, 1904-05; Assistant Curator, Division of Plants, United States National Museum, 1905-06.

JAMES MARVIN MOTLEY, Assistant Professor of Political Economy.

A. B., William Jewell College, 1901, A. M., 1904; Ph. D., Johns Hopkins University, 1906. Fellow in Economics, Johns Hopkins University, 1904, Instructor, 1906; Acting Secretary, Baltimore Federated Charities, 1905; Professor of Economics and Sociology, Wells College, 1906-07.

JOHN EZRA McDOWELL, Assistant Registrar.

A. B., Leland Stanford Jr. University, 1900.

CLIFFORD GILMORE ALLEN, Assistant Professor of Romanic Languages.

A. B., Boston University, 1900; A. M., Leland Stanford Jr. University, 1903; Docteur de l'Université de Paris, 1906. Student, University of Paris, 1903-04; Fellow of Boston University and Student of Universities of Paris and Madrid, 1904-05.

WILLIAM ALBERT MANNING, Assistant Professor of Mathematics.

A. B., Willamette University, 1900; A. M., Leland Stanford Jr. University, 1902, Ph. D., 1904.

JOSEPH GRANT BROWN, Assistant Professor of Physics.

A. B., Leland Stanford Jr. University, 1901, A. M., 1903. Graduate, Illinois State Normal University, 1894, Instructor in Physics and Chemistry, 1894-98.

ALBERT LÉON GUÉRARD, Assistant Professor of French.

B. A., Paris, 1898; Agrégé de l'Université de France, 1906. Traveling Scholarship in England, 1901-03; Junior Professor of French Literature and Examiner in History, State Normal School, Paris, 1904-06; Instructor in the Romanic Languages, Williams College, 1906-07.

EVELYN WIGHT ALLAN, Dean of Women.

B. S., St. Lawrence University, 1891; A. B., Leland Stanford Jr. University, 1896. Teacher in Montclair (N. J.) High School, 1892-95; Teacher of English, Jersey City High School, 1897-99; Graduate Student at Columbia University, 1907; Teacher of English, Manual Training High School, Brooklyn (N. Y.), 1899-1908.

EDWIN CHAPIN STARKS, Assistant Professor of Zoology.

Assistant in United States Bureau of Biological Survey, 1897-99; Curator of the Museum and Assistant Professor of Zoology, University of Washington, 1899-1900.

SAMUEL BARCLAY CHARTERS, Jr., Assistant Professor of Electrical Engineering.

M. E., Cornell University, 1904. Delegate International Electrical Congress, St. Louis Exposition, 1904; with Westinghouse Electric & Mfg. Company, Pittsburgh (Pa.), 1904-05.

EVERETT PARKER LESLEY, Assistant Professor of Mechanical Engineering.

A. B., Leland Stanford Jr. University, 1897; M. M. E., Cornell University, 1905. Apprentice and Foreman in Union Iron Works, San Francisco, 1897-1903, Assistant Inspector to Naval Constructor, 1903-04; Draftsman at U. S. Experimental Model Basin, Washington (D. C.), 1905-07.

ROBERT BARTHOLOW HARSHE, Assistant Professor of Graphic Arts.

B. L., University of Missouri, 1899. Graduate Student, University of Missouri, 1899-1901; Student Chicago Art Institute, 1901-02; Supervisor Manual Arts, Columbus (Ga.), 1902; Instructor, Summer School of the South, 1903; Manual Training Scholar, Teachers' College, Columbia University, 1903-04; Scholar, Ipswich Summer School, 1904, Art Students' League, 1904-05; Instructor, University of Missouri, 1905-06; Instructor, New York School of Industrial Art, 1906-07; Director, Nantucket Summer School of Design, 1907.

PERCY ERWIN DAVIDSON, Assistant Professor of Education.

A. B., Leland Stanford Jr. University, 1898; A. M., Harvard University, 1905. Teacher, Grammar and High Schools, San Diego (Cal.), 1898-1900; Supervisor of History and English Teaching, San Francisco State Normal School, 1900-03; Assistant in Education, San Diego State Normal, 1903-04; Graduate Student, Teachers' College, Columbia University, 1905-07; Instructor in Logic and History of Education, New York Training School for Teachers, 1906-07.

GEORGE HOLLAND SABINE, Assistant Professor of Philosophy.

A. B., Cornell University, 1903, Ph. D., 1906. Sage Fellow in Philosophy, Cornell University, 1905-06, Assistant in Philosophy, 1906-07.

†PAYSON JACKSON TREAT, Assistant Professor of History.

A. B., Wesleyan University, 1900; A. M., Columbia University, 1903. Instructor in History, Barnard School, New York City, 1900-03; Graduate Student, Leland Stanford Jr. University, 1903-05; Research Student in Far East, 1906-7; Instructor in Government, Harvard University, 1908-09.

MARY ISABEL McCRACKEN, Assistant Professor of Bionomics.

A. B., Leland Stanford Jr. University, 1904, A. M., 1905, Ph. D., 1908.

RENNIE WILBUR DOANE, Assistant Professor of Entomology.

A. B., Leland Stanford Jr. University, 1896. Assistant in Zoology and Botany, Washington State College, 1896-99, Assistant Professor of Zoology and Entomology, 1899-1901; Superintendent Fisheries Experiment Station, Keyport (Wn.), 1901-03.

WALTER KENRICK FISHER, Assistant Professor of Zoology.

A. B., Leland Stanford Jr. University, 1901, A. M., 1903, Ph. D., 1906. Assistant, U. S. Biological Survey, 1897-1901, 1903; Assistant U. S. Fish Commission, 1902.

JOHN PEARCE MITCHELL, Assistant Professor of Chemistry.

A. B., Leland Stanford Jr. University, 1903, A. M., 1904. Student, University of Leipzig, 1904-05.

LEONAS LANCELOT BURLINGAME, Assistant Professor of Botany.

Ph. B., Ohio Northern University, 1901; A. B., University of Chicago, 1906, Ph. D., 1908. Instructor in Biology, Ohio Northern University, 1901-04; Fellow in Botany, University of Chicago, 1906, Assistant, 1906-08.

GEORGE HENRY DANTON, Acting Assistant Professor of German.

A. B., Columbia University, 1902, Ph. D., 1906. Assistant in Comparative Literature, Columbia University, 1902-03; Austin Teaching Fellow in German, Harvard University, 1903-04; Ottendorfer Memorial Fellow, New York University, and Student, Berlin and Munich, 1904-05; Instructor in German, College for Women, Western Reserve University, 1905-07.

EDWARD JOHN STANLEY, Instructor in Pattern Making.

Machinist with Pacific Iron Works, San Francisco, 1879, Blacksmith, 1880, Draughtsman, 1881, Pattern Maker, 1883-86; Third Assistant Engineer, Steamer Alabama, 1882; Foreman Pattern Maker, Union Iron Works, San Francisco, 1886-1901, 1906.

†Absent on leave, 1908-09.

JAMES BENNETT LIGGETT, Instructor in Foundry Practice.

Apprentice and Foundry Moulder, Falls Rivet and Machine Co., Cuyahoga Falls (Ohio), 1883-88, Webster, Camp & Lane, Akron (Ohio), 1888-93, Bowler & Co., Cleveland (Ohio), 1893-98; Cleveland Steel Casting Co., 1898-99; Foreman, Born Steel Range Co., Cleveland (Ohio), 1899-1902, Westinghouse Electric Co., Cleveland (Ohio), 1902.

CHLOE LESLEY STARKS, Instructor in Graphic Arts.

THERON J. PALMATEER, Instructor in Machine Shop Practice.

Apprentice with Sibley & Ware, South Bend (Ind.); Journeyman Machinist, 1896-1905, with R. Hoe & Co., New York, Columbus Machine Works, Columbus, O., Elems Engineering Works, Chicago, Western Gas Engine Works, Mishawaka, Ind., Webster Iron Works, Bakersfield, Cal., R. S. Hunkins, San Jose, Cal.

LAWRENCE EDMINSTER CUTTER, Instructor in Mechanical Engineering.

A. B., Leland Stanford Jr. University, 1906.

ROYCE REED LONG, Instructor in Hygiene.

A. B., Leland Stanford Jr. University, 1908. Physical Director, Young Men's Christian Association, Dixon (Ill.), 1897-98, Aurora (Ill.), 1899-1900; Assistant in Encina Gymnasium, 1902-04; Director of Vanderbilt University Gymnasium, 1904-06.

CHARLES NORMAN CROSS, Instructor in Mechanical Engineering.

M. E., Cornell University, 1906. Assistant Engineer, Long Island State Hospital, Brooklyn (N. Y.), 1905; Dynamo and Switchboard Attendant with the New York Edison Co., New York City, 1905-06; Electrician with the Lackawanna Steel Co., Buffalo (N. Y.), 1906.

WILLIAM HENRY SLOAN, Instructor in Chemistry.

A. B., Leland Stanford Jr. University, 1903, A. M., 1904. Student, University of Leipzig, 1904-05; Assistant Chemist, San Francisco Board of Health, 1905-06.

BRUNO BOEZINGER, Instructor in German.

A. B., Fort Worth University, 1894, A. M., 1895. Instructor in German, North Texas Normal School, 1895-98; Principal, German Department, San Antonio (Texas) H. S., 1899-1906; Instructor in German, Summer School, University of Texas, 1896.

THERESA PEET RUSSELL, Instructor in English.

Ph. B., State University of Iowa, 1895. Teacher in Denison Normal School, 1895-96; Principal Vilisca High School, 1896-98; Graduate Student at Radcliffe College, 1898-99; Teacher in Anamosa High School, 1899-1900.

HERMANN HILMER, Instructor in German.

A. B., University of Michigan, 1904; A. M., Columbia University, 1905. Assistant in German, University of Wisconsin, 1905-06; Student, University of Leipzig, 1906-07.

WILLIAM ARTHUR HILLEBRAND, Instructor in Electrical Engineering.

A. B., Cornell University, 1905. Student, Leland Stanford Jr. University, 1905-06; with Western Electric Company, San Francisco and Los Angeles, 1906-07.

LUTHER WILLIAM BAINEY, Instructor in Metallurgy.

Ph. G., University of California, 1897. Instructor in Chemistry and Microscopy, Department of Pharmacy, University of California, 1898-1900; Sampler, Copper King Mine Company, 1900-01; Student in Chemistry with L. Falkenau, 1901-02; Chemist and Chief Assayer, Selby Smelting and Lead Company, 1902-06; Manager of Xitinga Mines, Mexico, 1906.

EDWARD WILLIAM HOPE, Instructor in Greek.

A. B., University of Pennsylvania, 1898; A. M., Leland Stanford Jr. University, 1903; Ph. D., Johns Hopkins University, 1905. Student, Philadelphia Divinity School and Union Theological Seminary, 1897-1900; Instructor in the Classics, St. George's School, Newport (R. I.), 1900-01; Student, Universities of Berlin and Munich, 1901-02; Acting Adjunct Professor of Greek, University of Alabama, 1905-06; Instructor in Classics, University of Illinois, 1906-07.

JOHN HARRISON FOSS, Instructor in Civil Engineering.

A. B., Leland Stanford Jr. University, 1903. Assistant Engineer, Hamakua Ditch, Huelo, Maui (Hawaiian Islands), 1903-04, Engineer, 1904-05; Engineer, Maui Agricultural Co., Paia, Maui, 1905-07.

ROBERT HENRY HARCOURT, Instructor in Forge Practice.

Blacksmith with Risdon Iron Works, San Francisco, 1898-1901, 1903-04; with Hammond Car and Elevator Company, San Francisco, 1901-02, 1904-05; with National Iron Works, San Francisco, 1902-03; with Abner Doble Steel Company, San Francisco, 1905-06, Foreman of Forge Shop, 1906-07.

JESSE DWIGHT SUTER, Instructor in Applied Mathematics.

A. B., University of Wisconsin, 1904, A. M., 1905.

*EDWARD JORDAN, Instructor in Applied Mathematics.

B. S., University of Sydney, 1901. Assistant Government Geologist and Instructor in Physics and Mathematics, Brisbane Technical College, 1901-02; Science Master, Scotch College, Perth, and Instructor in Physics and Mathematics, Perth Technical School, 1903; Science and Mathematics Master, St. Peter's College, Adelaide, 1904-07.

JOHN KESTER BONNELL, Instructor in English.

A. B., Leland Stanford Jr. University, 1903; A. M., Harvard University, 1908. San Francisco Harvard Club Scholar at Harvard University, 1903-04.

ROBERT EARL RICHARDSON, Instructor in Bionomics.

A. B., University of Illinois, 1901, A. M., 1903. Fellow in Zoology, University of Illinois, 1902-03; Assistant, Illinois State Laboratory of Natural History, 1903-06; Research Assistant in Ichthyology, Leland Stanford Jr. University, 1906-07; Preparator in Zoology, University of California, 1907-08.

WILLIAM GEORGE BATEMAN, Instructor in Chemistry.

A. B., Leland Stanford Jr. University, 1907.

PERCY ALVIN MARTIN, Instructor in European History.

A. B., Leland Stanford Jr. University, 1902, A. M., 1903; A. M., Harvard University, 1907. Student, University of Paris, 1903-04, Universities of Berlin and Leipzig, 1907-08; Fellow, Harvard University, 1908; Professor of History and French, Whittier College, 1904-05.

FRANK OAKES ELLENWOOD, Instructor in Mechanical Engineering.

A. B., Leland Stanford Jr. University, 1904. With Construction Department of C. C. Moore & Co., San Francisco, 1904; Machine Shop, Tonopah Railroad Co., Tonopah (Nev.), 1905; Draughtsman, American Smelting and Refining Co., South San Francisco, 1906.

JOHN HAMILTON BLAIR, Instructor in History.

A. B., Cornell University, 1901, A. M., 1902; Ph. D., Harvard University, 1908. Student, University of Leipzig, 1903; Assistant in History, Harvard University, 1904-05.

* Until December, 1908.

SEDLEY LYNCH WARE, Instructor in History.

B. A., Oxford University, 1895; LL. B., Columbia University, 1900; Ph. D., Johns Hopkins University, 1908. Teacher in Porter Military Academy, Charleston (S. C.), 1903-04; Fellow in History, Johns Hopkins University, 1907-08.

CHARLES MOSER, Instructor in Civil Engineering.

C. E., Ohio Northern University, 1902; A. B., Leland Stanford Jr. University, 1908.

‡ALMON EDWARD ROTH, Students' Adviser.

‡GEORGE DE FOREST BARNETT, Instructor in Chemistry.

A. B., Leland Stanford Jr. University, 1906.

ERNEST GEORGE ATKIN, Acting Instructor in Romanic Languages.

A. B., Cornell University, 1904. Student, Cornell University, 1904-05; Instructor in French and German, Centenary Collegiate Institute, 1905-06; Cornell University Traveling Fellow in Romanic Languages, 1906-07.

FLORENCE BOLTON, Acting Instructor in Hygiene.

A. B., Leland Stanford Jr. University, 1907.

VERA TOWNSEND, Acting Instructor in Hygiene.

A. B., Leland Stanford Jr. University, 1901.

HENRY BLUESTONE, Acting Instructor in Romanic Languages.

A. B., Harvard University, 1907. Student, University of Paris, 1904-05; Instructor in Modern Languages, Washington State College, 1907-08.

‡FRED FINLEY FITZGERALD, Acting Instructor in Chemistry.

A. B., Leland Stanford Jr. University, 1905.

IRA BROWN CROSS, Acting Instructor in Economics.

A. B., University of Wisconsin, 1905, A. M., 1906.

LECTURERS

LUTHER BURBANK, Lecturer on Plant Evolution.

MORRIS ELMER DAILEY, Lecturer in Education.

A. M., Indiana University, 1897; LL. D., Drake University, 1901. Superintendent of City Schools, Fresno (Cal.), 1897-99; Vice-President and Teacher of History, San Jose State Normal School, 1899-1900, President since 1900.

JOHN SLATER PARTRIDGE, Lecturer in Law.

A. B., University of California, 1892, A. M., 1894. Instructor in Latin, Lowell High School, San Francisco, 1893-97; Assistant City Attorney, San Francisco, 1904-05.

ASSISTANTS

([1] First Semester; [2] Second Semester.)

Greek

LEWIS VINCELL BOYLE, Jr.,

‡ Beginning September, 1909.

Latin

ESTHER JEAN SPENCER.
A. B., Leland Stanford Jr. University, 1907.

German

FRIEDA MATHILDA HAUSWIRTH.

HERSCH RAM.
Ph. D., University of Leipzig, 1904. Member of Semitistiches Institut, Leipzig, 1902-05; Student, Universities of Berlin and Leipzig, 1896-1904.

Romanic Languages

SOPHIE BOEZINGER.
Graduate State Normal, Neuchatel, Switzerland, 1875.

English

ANNA MATILDA BILLE.
A. B., Leland Stanford Jr. University, 1908.

CARRIE AMANDA GOODHUE.

ALICE WINDSOR KIMBALL.
A. B., Leland Stanford Jr. University, 1904.

ELIZABETH MOORE.
Ph. B., Iowa College, 1907; Ph. M., University of Chicago, 1908.

HARRY LAWRENCE PRICE.

Education

JESSE BRUNDAGE SEARS.

History

MYRTLE ELIZABETH AMICK.
A. B., Leland Stanford Jr. University, 1908.

[1]GRACE MAJELLA BODLEY.
A. B., Leland Stanford Jr. University, 1907.

ELSIE BRANNER.
A. B., Leland Stanford Jr. University, 1908.

OWEN COCHRAN COY.
Ph. B., University of the Pacific, 1907.

HARVEY EMMONDS DORR.
B. L., University of the Pacific, 1905; A. B., Leland Stanford Jr. University, 1906.

[2]HARRY FINLEY HENDERSON.

Economics

DE ESTRAYE CASSELL BOYD.

YAMATO ICHIHASHI.
A. B., Leland Stanford Jr. University, 1907, A. M., 1908.

Drawing

HARRIET PARK.

Mathematics

MARY ELIZABETH BILLE.
A. B., Leland Stanford Jr. University, 1908.

Applied Mathematics

[2]ROBERT LONG DAUGHERTY.

LEON BENEDICT REYNOLDS.
A. B., Hillsdale College, 1906.

ARTHUR FAY TAGGART.

Physics

ALBERT EDWARD CASWELL.
A. B., Leland Stanford Jr. University, 1908.

[1]WALDO CARNAHAN COLE.

SHIRLEY HYATT.
A. B., Leland Stanford Jr. University, 1906, A. M., 1908.

GEORGE FRANCIS McEWEN.
A. B., Leland Stanford Jr. University, 1908.

[2]ROLAND GROTECLOSS MARX.

PERLEY ASON ROSS.
A. B., Leland Stanford Jr. University, 1908.

Chemistry

MANUEL BENJAMIN BAIROS.

FORREST BAKER BEYER.
A. B., Yale University, 1908.

GEORGE SHAMBAUGH BOHART.

ALEXANDER MACBETH CUTHBERTSON.

ELMER R. EWELL.

ROBERT WADE POINDEXTER.

EDWARD WALDO RICE.

ERNEST HENRY STABER.

Botany

SAMUEL HASH SHERFY.

JOSEPHINE LOUISE DOWS RANDALL.

Systematic Botany

ERNEST ALEXANDER McGREGOR.
A. B., Leland Stanford Jr. University, 1908.

JAMES IRA WILSON McMURPHY.
A. B., Leland Stanford Jr. University, 1908.

Physiology and Histology

[2]FRANK WALTER WEYMOUTH.

Hygiene and Physical Training

[1]JOHN FRYE CHAPMAN.
A. B., Leland Stanford Jr. University, 1909.

[1]HAROLD ARTHUR GILMAN.
A. B., Leland Stanford Jr. University, 1909.

[2]FRANK HOWARD HILTON.

EDITH EUGENIE JOHNSON.
M. D., Cornell University Medical School, 1907.

EUGENE GARRISON McCANN.

[2]HENRY W. MALONEY.

ARCHIBALD FORBES MESTON.

EDWARD W. MOULTON.

EDITH WOODBURN PATTERSON.

WILLIAM RAMSAY DOWS RANDALL.
A. B., Leland Stanford Jr. University, 1906.

CLYDE T. WETMORE.

[2]JOHN HENRY WIGGINS.

Zoology

[2]WILLIS HORTON RICH.
B. S., Lombard College, 1905.

Entomology and Bionomics

JOHN MARTIN MILLER.
A. B., Leland Stanford Jr. University, 1908.

CHARLES SHOEMAKER MORRIS.
A. B., Leland Stanford Jr. University, 1908.

[2]EVERETT WINDER RUST.
A. B., Leland Stanford Jr. University, 1908.

Geology and Mining

MARGARET A. POST, Clerk.

FRANK WARREN TURNER.

Mechanical Engineering

CARL BREER.

H. C. GREGG.

WILLIAM CHRISTIAN THEILE.
A. B., Leland Stanford Jr. University, 1909.

JOHN IBBOTSON THOMPSON.

Civil Engineering

ARTHUR CHAPIN COONRADT.
SANFORD BALLARD DOLE.
JOHN STRIDER HESS.
CHARLES ALFRED RANDALL.
[2]ERNEST WALKER SAWYER.
[1]RICHARD GARBETT SMITH.
NELSON TAYLOR.
[1]BURCHELL WILLIAMS UPSON.

President's Office

A. RUTH FIELD.
MAY VIOLA SWIFT.
FREDERICK BERTRAM WOOD.

Registrar's Office

CECILIA FREEMAN ATHERTON.
A. B., Leland Stanford Jr. University, 1904.

SUSAN BROWN BRISTOL, Secretary in Charge of Recommendation of Teachers.
A. B., Leland Stanford Jr. University, 1897.

LAURA INGEBORG NAGEL.
A. B., Leland Stanford Jr. University, 1904, A. M., 1905.

FRED DAN POST, Stenographer.

UNIVERSITY LIBRARY

Staff

JOHN EDWARD GOODWIN, Assistant Librarian.
A. B., University of Wisconsin, 1901; B. L. S., New York State Library School, 1905. Classifier and Cataloguer, Madison (Wis.) Free Library, 1901-04; Assistant, Legislative Reference Department, Wisconsin Free Library Commission, 1903.

SYDNEY BANCROFT MITCHELL, Head of Order Department.
A. B., McGill University, 1901, A. M., 1904. Student, New York State Library School, 1903-04, McGill University Library, 1901-03, 1905-08.

HELEN BINNINGER SUTLIFF, Acting Head Cataloguer.
A. B., University of Kansas, 1890. Head Cataloguer, University of Kansas Library, 1891-1905; Cataloguer in Columbia University Library, Summer, 1901.

†LILLIAN PEARLE GREEN, Reference Librarian.

A. B., Leland Stanford Jr. University, 1898; Student, New York State Library, 1900-01.

ALICE NEWMAN HAYS, Classifier.

A. B., Leland Stanford Jr. University, 1896; B. L. S., New York State Library School, 1903. Assistant, Home Education Department, New York State Library, 1901.

HELEN LATHROP, Reference Librarian.

A. B., Leland Stanford Jr. University, 1902. Student, New York State Library School, 1905-06; Assistant, Children's Department, Carnegie Library of Pittsburgh, 1906-07.

EDITH MARGARET COULTER, Supervisor Serial Department.

A. B., Leland Stanford Jr. University, 1905; B. L. S., New York State Library School, 1907.

Assistants

CARL McNEILAN BALLARD.

WINNIFRED HENRIETTA BIGLEY, Cataloguer.

A. B., University of California, 1903. Student, University of California, Library Summer School, 1907.

[2]M. M. DEAN.

SAMUEL BRYAN.

EDWARD S. EVENDEN.

MAY FRANKLIN, Cataloguer.

A. B., Leland Stanford Jr. University, 1907.

MABEL SABRINA GRAY.

ELIZABETH HADDEN, Cataloguer.

ANNA GERTRUDE HALL.

FRANCES SOPHIA COURTENAY JAMES.

A. B., University of Wisconsin, 1904, A. M., 1905. Graduate Student, University of Wisconsin, 1905-07; Cataloguer, Wisconsin Historical Library, 1901-07, University of Washington, 1907-08.

MARJORIE HADLEY LITTLE.

A. B., Leland Stanford Jr. University, 1908.

LOUISE MARCUS.

BLANCHE JULIA MOBLEY.

LETITIA PATTERSON.

A. B., Leland Stanford Jr. University, 1901.

[2]WILLIAM STRATTON PORTER.

CORNELIA DOUGLAS PROVINES.

MAIDA ROSSITER.

A. B., Cornell University, 1903.

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†Absent on leave, 1908-09.

STERLING JOHN TALBOT.
JAMES SCOTT TOPHAM.
[1]JOHN HENRY WIGGINS.
RAYMOND BERT WHEELER.
M. J. WOODRUFF, Stenographer.

MEMORIAL CHURCH

GODFREY CARL BUEHRER, Organist.

A. M., Rensselaer College (Indiana), 1896; Mus. Doc. Hon., Santa Clara College, 1907. Student Scola Cantorum, Paris, 1904-06; Instructor of Band, Orchestra, and Choir, Rensselaer College, 1892-96; Instructor, St. Joseph's College, San Jose, 1897-98; Organist, St. Joseph's Church, San Jose, 1899 1908; Professor of Music, Santa Clara College, 1901-05.

LELAND STANFORD JUNIOR MUSEUM

HARRY C. PETERSON, Curator.

Charter Member American Museum Association.

ROBLE HALL

LUCRETIA HOUSTON LANKTREE, Matron.

ORGANIZATION

Foundation

The Leland Stanford Junior University was established under an Act of the Legislature, approved March 9, 1885, entitled "An Act to advance learning, the arts and sciences, and to promote the public welfare by providing for the conveyance, holding, and protection of property, and the creation of trusts for the founding, endowment, erection, and maintenance within this State of universities, colleges, schools, seminaries of learning, mechanical institutes, museums, and galleries of art." The Founding Grant, executed November 11, 1885, was made public at a meeting of the Board of Trustees, held in San Francisco, November 14, 1885. The cornerstone of the inner quadrangle was laid May 14, 1887, and the institution opened to students October 1, 1891.

Provisions of the Founding Grant

"We, Leland Stanford and Jane Lathrop Stanford, husband and wife, grantors, desiring to promote the public welfare by founding, endowing, and having maintained upon our estate known as the Palo Alto Farm, and situated in the Counties of San Mateo and Santa Clara, State of California, United States of America, a university for both sexes, with the colleges, schools, seminaries of learning, mechanical institutes, museums, galleries of art, and all other things necessary and appropriate to a university of high degree, to that end, and for that purpose, do hereby grant," etc.

"Its nature, that of a university with such seminaries of learning as shall make it of the highest grade, including mechanical institutes, museums, galleries of art, laboratories and conservatories, together with all things necessary for the study of agriculture in all its branches, and for mechanical training, and the studies and exercises directed to the cultivation and enlargement of the mind;

"Its object, to qualify students for personal success and direct usefulness in life;

"And its purposes, to promote the public welfare by exercising an influence in behalf of humanity and civilization, teaching the blessings of liberty regulated by law, and inculcating love and reverence for the great principles of government as derived from the inalienable rights of man to life, liberty, and the pursuit of happiness."

"Since the idea of establishing an institution of this kind, for the benefit of mankind, came directly and largely from our son and only

child, Leland, and in the belief that had he been spared to advise as to the disposition of our estate, he would have desired the devotion of a large portion thereof to this purpose, we will that for all time to come the institution hereby founded shall bear his name, and shall be known as The Leland Stanford Junior University."

The general management and control of the institution is vested in a Board of Trustees originally numbering twenty-four, and chosen for life. By the Amending Act of May 31, 1899, the number of trustees is reduced to fifteen, with future elections for a term of ten years. The Board of Trustees fills all vacancies.

"The Trustees shall have power and it shall be their duty:

"To establish and maintain at such University an educational system which will, if followed, fit the graduate for some useful pursuit, and to this end to cause the pupils, as early as may be, to declare the particular calling which in life they may desire to pursue. . . .

"To prohibit sectarian instruction, but to have taught in the University the immortality of the soul, the existence of an all-wise and benevolent Creator, and that obedience to His laws is the highest duty of man.

"To have taught in the University the right and advantages of association and coöperation.

"To afford equal facilities and give equal advantages in the University to both sexes.

"To maintain on the Palo Alto estate a farm for instruction in agriculture in all its branches. . . . .

"It shall be the duty of the Trustees to give to the President of the University the following powers:

"To prescribe the duties of the professors and teachers; to remove professors and teachers at will; to prescribe and enforce the course of study and the mode and manner of teaching; such other powers as will enable him to control the educational part of the University to such an extent that he may justly be held responsible for the course of study therein and for the good conduct and capacity of the professors and teachers."

"The Board of Trustees shall annually report all their proceedings to the person who for the time being shall fill the office of Governor of the State of California, and shall accompany such report with a full account of their financial operations for the preceding year, and with a statement of the financial affairs of the institution."

"The Trustees shall constitute the president and professors the faculty of the University, and shall prescribe their powers and duties as such."

A clause in the Founding Grant reserved to the grantors the right to alter, amend, or modify the terms and conditions of the grant in important particulars. Under this provision amendments were made by Mrs. Stanford, June 1, 1897, May 31, 1899, March 28, 1902, October 3, 1902, and June 1, 1903. These amendments were concerned mainly with matters of detail, but included also a provision limiting the number of women students to five hundred.

An Amendment to the Constitution of the State of California, adopted November 6, 1900, "permitted, approved, and confirmed all the trusts, estates, terms, and conditions" of the Founding Grant and of all the deeds, conveyances, and other instruments made and delivered before that date, and authorized the Legislature, under certain conditions, to exempt the property of the University from taxation.

The University Faculty

Under the Articles of Organization, adopted by the Board of Trustees March 31, 1904, the power and authority of the University Faculty is vested in the Academic Council, consisting of the President of the University, the professors and associate professors, the librarian, the registrar, such assistant professors as have been upon the roll of the faculty for three years, whether as assistant professors or instructors, and such other officers of the University or members of the teaching staff as the Academic Council may, with the assent of the Board of Trustees, determine.

All general University regulations, statutes, and rules as to matters within the province of the faculty, must be initiated in and passed by the Academic Council. The Academic Council has general power and responsibility for the internal administration of the University, subject to express provisions contained in the Articles of Organization respecting the methods of exercising such powers through the President of the University, the Advisory Board, the Standing Committees, and the Department Faculties.

The Advisory Board consists of nine members of the rank of professor, one from each of the five department groups, and four chosen without reference to groups. All executive acts of general importance, such as recommendations for appointments, promotions, and dismissals, for the creation of new departments or chairs, etc., must be submitted by the President to the Advisory Board. The Advisory Board is also privileged to make such recommendations to the President, regarding policy, as it may decide by vote to be expedient, but no recommendations for appointments, promotions, or dismissals, may originate with the Advisory Board.

The Executive Committee of the Academic Council consists of the President, Vice-President, Registrar, and two members from each department group elected by the Academic Council. The Executive Committee appoints the Academic Committees of the Council and formulates the duties and controls the policy of Administrative and Academic Committees.

The Standing Administrative Committees of the Council are appointed by the President subject to the approval of the Advisory Board.

The Department Faculties consist of the professors, associate professors, assistant professors, and instructors in the several departments, but only members of the Academic Council have the right to vote. A Department Faculty has direction of the work of instruction in the department and of the internal administration of the department, subject only to such control as is vested in the Board of Trustees, the President of the University, or the Academic Council. The Executive Head of the Department Faculty is designated by the President with the approval of the Advisory Board and of the Board of Trustees.

Departments

The work of the University embraces the following departments, divided into groups for the purpose of elections to the Advisory Board and Executive Committee, as indicated:

(I) Greek, Latin, Germanic Languages, Romanic Languages, English Literature and Rhetoric, English Philology; (II) Botany, Systematic Botany and Forestry, Physiology and Histology, Hygiene, Entomology and Bionomics, Geology and Mining; (III) Psychology, Mathematics, Physics, Chemistry; (IV) Philosophy, Education, History, Economics and Social Science, Law; (V) Graphic Arts, Applied Mathematics, Civil Engineering, Mechanical Engineering, Electrical Engineering.

The Marine Biological Laboratory, founded by the liberality of Mr. Timothy Hopkins, and located at Pacific Grove, on the Bay of Monterey, is a branch of the biological work of the University.

Buildings

The central group of buildings, constituting two quadrangles, the one surrounding the other, is an adaptation of the Mission Architecture, and reproduces on an imposing scale the open arches, long colonnades, and red tile roofing of the old Spanish Missions of California. The Inner Quadrangle consists of twelve one-story buildings and the Memorial Church, connected by a continuous open arcade, and surrounding a court 586 feet long by 246 feet wide, or three and a quarter acres. The buildings are of buff sandstone, somewhat varied

in color, the stonework of broken ashlar, with rough rock-face, and the roofs covered with red tile.

The fourteen buildings of the Outer Quadrangle are constructed of the same material and in the same general style as the Inner Quadrangle. They are also connected on the outer side by open arcades extending entirely around the quadrangle. The extreme length of the Outer Quadrangle is 894 feet.

The Leland Stanford Junior Museum is situated a quarter of a mile from the Quadrangles, on the west side of the Palo Alto Avenue, and contains the archæological and art collections of the University.

The Chemistry Building is located between the Quadrangles and the Museum. It consists of two separate structures—the main Chemistry Building and the Assaying Laboratory.

Behind the central quadrangles are located the workshops of the engineering departments, experimental laboratories, power-houses, etc.

The dormitories are east and west of the Quadrangles. Encina Hall, for men, is at the east, and has accommodations for three hundred students. Roble Hall, for women, is at the west, and will accommodate one hundred students. Madrono Hall, a frame building, at present leased to private parties, receives only women students. It will accommodate about thirty students.

Encina Gymnasium and Roble Gymnasium are frame buildings, equipped with the necessary apparatus and appliances for physical training.

The University Inn is a frame building intended primarily as a University commons for students living on the campus.

The grounds immediately about the University have been reserved in part for experimental and ornamental purposes, in part as residence sites for members of the Faculty and others who may desire to live on the University campus.

ADMISSION TO THE UNIVERSITY

I. UNDERGRADUATE STANDING

Candidates must be at least sixteen years of age. They must present satisfactory recommendations as to personal character, and, if from other colleges or universities, must bring letters of honorable dismissal.

The standard of preparation is the four years' high school course. Admission in undergraduate standing will be granted as follows:

1) To candidates who present, on examination or through acceptable school credentials, entrance subjects (including English Composition) aggregating *fifteen units.* (See below.)

2) To graduates of approved preparatory schools specially recommended for distinguished scholarship or exceptional intellectual promise, without regard to the particular subjects included in the preparatory course.

3) To recommended graduates of the California State Normal Schools, and to graduates of other Normal Schools approved by the California State Board of Education as of equal rank with the State Normal Schools of California, who are holders of the highest grade diploma issued by these Normal Schools. (For conditions on which advanced standing may be granted Normal School graduates, see p. 52.)

4) To holders of seventy two count Diplomas issued by the Regents of the State of New York, granted *with credit, with great credit,* or *with highest credit.*

5) To candidates from China, Japan, Mexico, and other foreign countries who present credentials showing the satisfactory completion of courses of study equivalent to those of approved American high schools. In Japan such courses of study must extend at least two years beyond graduation from a middle school; in Mexico, graduation from the National Preparatory School or from other preparatory schools maintaining six years' courses, will be required. Before admission to the University such candidates must show ability to use, and to understand readily, both written and spoken English; if coming directly from these countries they must ordinarily expect to spend at least one year in an American preparatory school, or under special instruction in English, before being able to meet this test.

An *entrance unit* represents a year's course of study covering not

less than one hundred and fifty recitation periods, two laboratory periods being regarded as the equivalent of one recitation period.

Entrance Subjects

It is the purpose of the University to recognize for entrance credit any subject having an established place in the secondary school curriculum, in which adequate instruction is given and which is pursued to satisfactory results. While not indifferent to the importance of a wise coördination of high school subjects for the individual pupil, the University regards this as primarily a problem for the secondary school. No prescription, other than English, will be made. But candidates desiring to study mathematics must obviously offer such elementary mathematics as is not taught in the University, and engineering students are expected to offer also solid geometry and trigonometry. Candidates desiring to study Latin must offer at least two entrance units in that subject. The State law governing the practice of medicine in California prescribes, among other requirements, that the preparatory course of every person practicing medicine or surgery in the State shall have included two years of Latin, two years of mathematics, two years of English, one year of history, two years of laboratory science, and six years of further credits in language, literature, history, or science.

Entrance Credit on Examination

Entrance examinations are held by the University at the beginning of the academic year.* Candidates will be admitted to these examinations on presenting evidence of systematic preparation in the subjects concerned. Applications should be made to the Registrar, by whom

*Candidates desiring examinations at the close of the school year are advised to take the examinations of the College Entrance Examination Board. In 1909 these examinations will be held June 14-19.

All applications for examination must be addressed to the College Entrance Examination Board, Post Office Sub-Station 84, New York, N. Y., and must be made upon a blank form, to be obtained from the Secretary of the Board upon application. Applications for examination at points in the United States east of the Mississippi River must be received by the Board on or before Monday, May 31, 1909; applications for examination elsewhere in the United States, or in Canada, must be received at least three weeks in advance of the examinations, that is on or before Monday, May 24, 1909; and applications for examination outside the United States and Canada must be received at least five weeks in advance of the examinations, that is, on or before Monday, May 10, 1909. Applications received later than the dates named will be accepted when it is possible to arrange for the examination of the candidates concerned, but only upon the payment of $5 in addition to the usual examination fee.

The examination fee is $5 for all candidates examined at points in the United States and Canada, and $15 for all candidates examined outside of the United

permits will be issued. Special examinations outside of the regular examination days will not ordinarily be granted. In exceptional cases such examinations may be arranged by the Committee on Admission; but a special fee of two dollars will be charged the candidate for each subject in which examination is taken.

Specimen examination questions may be obtained on application to the Registrar.

Entrance Examination Schedule for August, 1909

	August 26	*August 27*	*August 28*	*August 29*
8:15	El. Algebra	Physiology	Physics	Zoology
		El. French	El. Spanish	El. Latin
10:15	Adv. Algebra	Chemistry	Int. Spanish	Biology
	Amer. Hist.	Inter. French	El. German	Adv. Latin
11:30	Pl. Geometry	English Comp.	El. Engl. Lit.	M. & M. Hist.
	Botany	Adv. French	Int. German	El. Greek
3:30	Solid. Geom.	Hygiene	Adv. Engl. Lit.	Ancient Hist.
	Trig. (4:45)	English Hist.	Hist. Engl. Lit.	Adv. Greek
			Adv. German	

Candidates are not required to take all the examinations at one time; but (unless following graduation from an approved school) account will not ordinarily be taken of an examination passed more than sixteen months before the proposed time of entering.

Satisfactory passing grades obtained in the regular entrance examinations of institutions of equivalent rank, or of the College Entrance Examination Board, will be accepted in subjects corresponding to those outlined in the entrance list.

Entrance Credit on Recommendation

Entrance credit will be granted to recommended graduates of approved preparatory schools, under the following conditions:

States and Canada. The fee (which cannot be accepted in advance of the application) should be remitted by postal order, express order, or draft on New York to the order of the College Entrance Examination Board.

A list of the places at which examinations are to be held by the Board is published about March 1st of each year. Requests that the examinations be held at particular points, to receive proper consideration, should be addressed to the Secretary of the Board not later than February 1.

In these examinations the University will consider 60 as the lowest passing grade.

A definition of requirements in the various subjects in which examinations are held is given in Document No. 40, issued by the Board. (Price, 10 cents: address the Secretary, Post Office Sub-Station 84, New York, N. Y.)

The examination questions set by the College Entrance Examination Board are published in yearly volumes by Ginn & Co., Boston.

1. The candidate must complete the full high school course and be duly graduated after at least one year's attendance. Work previously done in other schools may be included in the Certificate of Record; but subjects completed with private tutors or under other than regular school conditions will be credited only on examination.

2. The time given to particular subjects and the amount of work covered must be substantially as indicated in the outline of entrance subjects. (Some flexibility in the time requirement is admissible; but the minimum for a unit of credit is one hundred and fifty recitation periods of forty-five minutes each.) Candidates who have devoted less than the minimum time to a given subject must expect to receive entrance credit only on passing the regular entrance examination.

3. The grade of work must be satisfactory. The recommending grade may properly be fixed at about ten per cent above the lowest passing grade, with provision that lower passing grades in a particular subject or subjects may be offset by a general high average or by decided intellectual promise; but any recommending grade, fixed by the school, which insures a high standard of preparation will be respected by the University. Where the candidate's work falls below recommending grade, entrance credit must be expected, in general, only after additional study and on passing the regular entrance examinations.

Approved preparatory schools are schools maintaining full four years' courses of high school work and accredited (1) by (a) The New England College Entrance Certificate Board, (b) The North Central Association of Colleges and Secondary Schools, (c) colleges and universities of recognized standing, or (2) upon inspection undertaken or authorized by the University. Schools which have sent five or more pupils to the University may be granted accrediting privileges upon the basis of the satisfactory record of such pupils.

Any subject in the entrance list may be credited without examination when it is evident that the requirements prescribed by the University have been fully met. In the newer subjects, where high school standards are not so well fixed, credit will not be given except where the quantity and quality of the work are specially evidenced. Music will be credited only when the examinations of the College Entrance Examination Board have been passed.

It is the purpose of the University to emphasize (1) quality of preparation and intellectual promise; (2) personal character and seriousness of purpose. Principals are expected to exact a high standard of scholarship as preliminary to recommendation, and to withhold

recommendation from those who are undesirable or unpromising from the point of view of moral qualities or habits.

The records of first-year students will be considered as additional evidence of the standing of preparatory schools and of their good faith and success in meeting the requirements of the University, and such evidence will be made use of in determining as to the continuance of accrediting relations.

Recommendations will be considered at any time of the year, but, since, in general, candidates cannot be assured of admission to the University without examination in one or more subjects, it is important that credentials be forwarded as early as possible.

Blanks for admission on recommendation may be obtained from the Registrar.

Special Regulations Governing Admission of Women

The Founding Grant of the University, as amended May 31, 1899, directs "that the number of women attending the University as students shall at no time ever exceed five hundred." In conforming to this provision the following plan of admission has been adopted:

Graduates of other universities and candidates who have completed at least two full years in a college or university of recognized standing, will be admitted without previous application, provided they present themselves for matriculation upon the regular registration days. Women once admitted to the University will be allowed to continue without further application, so long as scholarship and conduct are satisfactory, and provided they present themselves for registration on the regularly appointed days. Places will not be held for women after the regular registration days, except by permission of the Committee on Registration granted in advance.

For the remaining number of women students permitted by the Founding Grant (for September, 1909, approximately 135) the plan of admission is as follows:

Applications may be made at any time. They must state the proposed time of entrance and the credentials which the candidate expects to offer. To insure consideration applications made more than ten months before the proposed date of matriculation must be renewed (by written notice or new application) some time during the ten months immediately preceding the proposed date of matriculation. Blanks for application may be obtained of the Registrar.

Numbered lists will be begun July 10th (for the August-September matriculation), and October 10th (for the January matriculation). All candidates whose credentials are complete and in the hands of the

Registrar on the dates specified will be given numbered admission cards in the order of original application. After the first lists are made up, additional numbered cards will be issued in the order in which complete credentials are received, the order of original application applying where the complete credentials of more than one candidate are received on the same date.

On registration day candidates will be preferred in their serial order. After registration day the serial order of candidates actually present will be observed.

Candidates receiving numbered cards for a given date, but not matriculating at that time, may be transferred to any succeeding list, in their serial order, by giving due notice to the Registrar (before October 10th, or July 10th, as the case may be).

Definition of Requirements

The following outline indicates the kind and amount of preparatory work acceptable to the University in the subjects in which entrance examinations are given by the University. Information concerning other subjects which may be credited on recommendation or on examinations passed elsewhere will be furnished on application to the Registrar. The definition of requirements adopted by the College Entrance Examination Board may be substituted for the requirements outlined by the University, in all subjects included in the Board's list.

1. English Composition

The work in English Composition should be given at least two recitations a week throughout the entire high school course. The greater part of this time should be devoted to practice in writing, but it is recommended that some attention be also paid to instruction in the fundamental principles of formal rhetoric.

The examination is to test the candidate's ability to write exercises not only free from marked deficiencies in spelling, punctuation, sentence structure, and paragraphing, but also indicative of his ability to think consecutively on a simple subject. The subjects which are set at the time of the examination will be drawn for the most part from the candidate's own experiences. (1½ units)

Note.—All first-year undergraduates (including special students and students coming from other institutions with less than twenty units of advanced credit) will be required to satisfy the University standard in English Composition. This may be done by passing either (1) the regular examination in Entrance Subject 1, or (2) a special Matriculation Test given during matriculation week. Since the latter test is

the exact equivalent of the Entrance Examination, recommended students who find it convenient to take the earlier examination are encouraged to do so.

A student who passes either of the above tests may be exempted from Composition work in the University, or may enter Course 2 (*a* or *b*) at his option. A student who does not pass will be required to register in English A, unless, on account of the merits of his paper, the Department assign him to English 2. A student having entrance deficiencies in composition to make up is required to register in the assigned course at once (unless by reason of numbers, or by special arrangement, the Department assigns some students to a later semester) and to remain in it until his work is of passing grade.

2. English Literature

The work in English Literature should be given an average of at least three recitations a week throughout the four years of the preparatory course. It should be so conducted as to give the student not only an appreciative understanding of the books selected either for general or for more intensive study, but also a knowledge of their place in the history of English Literature, and especially an ability to read aloud intelligently both prose and verse.

The following list of books is that named by the College Entrance Examination Board for use during the years 1909-11.

a. Elementary.

Group I (two to be selected).—Shakspere's As You Like It, Henry V, Julius Cæsar, The Merchant of Venice, Twelfth Night.

Group II (one to be selected):—Bacon's Essays; Bunyan's The Pilgrim's Progress, Part I; The Sir Roger de Coverley Papers in the Spectator; Franklin's Autobiography.

Group III (one to be selected):—Chaucer's Prologue; Spenser's Faerie Queene (selections); Pope's The Rape of the Lock; Goldsmith's The Deserted Village; Palgrave's Golden Treasury (First Series), Books II and III, with special attention to Dryden, Collins, Gray, Cowper, and Burns.

Group IV (two to be selected):—Goldsmith's The Vicar of Wakefield; Scott's Ivanhoe; Scott's Quentin Durward; Hawthorne's House of the Seven Gables; Thackeray's Henry Esmond; Mrs. Gaskell's Cranford; Dickens's Tale of Two Cities; George Eliot's Silas Marner; Blackmore's Lorna Doone.

Group V (two to be selected):—Irving's Sketch Book; Lamb's Essays of Elia; De Quincey's Joan of Arc and The English Mail Coach;

Carlyle's Heroes and Hero Worship; Emerson's Essays (selected); Ruskin's Sesame and Lilies.

Group VI (two to be selected):—Coleridge's The Ancient Mariner; Scott's The Lady of the Lake; Byron's Mazeppa and The Prisoner of Chillon; Palgrave's Golden Treasury (First Series), Book IV, with especial attention to Wordsworth, Keats, and Shelley; Macaulay's Lays of Ancient Rome; Poe's Poems; Lowell's The Vision of Sir Launfal; Arnold's Sohrab and Rustum; Longfellow's The Courtship of Miles Standish; Tennyson's Gareth and Lynette, Launcelot and Elaine, and The Passing of Arthur; Browning's Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Evelyn Hope, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, The Boy and the Angel, One Word More, Hervé Riel, Pheidippides. (1 unit)

b. Advanced.—The books for detailed study should be chosen from the following list as indicated. Preparation should include not only an examination of the significant details in the text, but also a study of the work in its larger outlines—its literary structure, style, and adaptation to its purpose.

(1) Shakspere's Macbeth; (2) Milton's Lycidas, Comus, L'Allegro, and Il Penseroso; (3) Burke's Speech on Conciliation with America, *or* Washington's Farewell Address and Webster's First Bunker Hill Oration; (4) Macaulay's Life of Johnson, *or* Carlyle's Essay on Burns. (1 unit)

c. History.—Candidates who offer 2*b* may, at their option, offer 2*c* in addition. The examination in both subjects will be given in the same period. Preparation should consist in a brief outline of the history of English Literature with a view to making clear the character and the tendencies of the more important literary epochs and associating the chief books and authors in their proper periods. (½ unit)

3-6. Mathematics

The definition of requirements, except in advanced algebra, part II, is that adopted by the College Entrance Examination Board, and is in accordance with recommendations made in 1903 by a committee of the American Mathematical Society.

3. Algebra

a. Elementary.—The four fundamental operations for rational algebraic expressions.

Factoring, determination of highest common factor and lowest com-

mon multiple by factoring. Fractions; including complex fractions, ratio and proportion. Linear equations, both numerical and literal, containing one or more unknown quantities. Problems depending on linear equations. Radicals, including the extraction of the square root of polynomials and of numbers. Exponents, including the fractional and negative. Quadratic equations, both numerical and literal. Simple cases of equations with one or more unknown quantities, that can be solved by the methods of linear or quadratic equations.

Problems depending on quadratic equations. The binomial theorem for positive integral exponents. The formulas for the nth term and the sum of the terms of arithmetical and geometric progressions, with applications.

It is assumed that pupils will be required throughout the course to solve numerous problems which involve putting questions into equations. Some of these problems should be chosen from mensuration, from physics, and from commercial life. The use of graphical methods and illustrations, particularly in connection with the solution of equations, is also expected. (1 to 1½ units)

b. Advanced I.—Permutations and combinations, limited to simple cases; complex numbers, with graphical representation of sums and differences; determinants, chiefly of the second, third, and fourth orders, including the use of minors and the solution of linear equations; numerical equations of higher degree, and so much of the theory of equations, with graphical methods, as is necessary for their treatment, including Descarte's rule of signs and Horner's method, but not Sturm's functions or multiple roots. (½ unit)

c. Advanced II.—An additional unit or half unit may be given in Advanced Algebra for a suitable amount of work upon a connected group of the topics usually included under the heading of advanced or higher algebra, such as, the binomial theorem and convergence of series, determinants, the theory of equations, etc. (½ to 1 unit)

4. Plane Geometry

The usual theorems and constructions of good text-books, including the general properties of plane rectilinear figures; the circle and the measurement of angles; similar polygons; areas; regular polygons and the measurement of the circle. The solution of numerous original exercises, including loci problems. Applications to the mensuration of lines and plane surfaces. (1 unit)

5. Solid Geometry

The usual theorems and constructions of good text-books, including the relation of planes and lines in space; the properties and measure-

ment or prisms, pyramids, cylinders, and cones; the sphere and the spherical triangle. The solution of numerous original exercises, including loci problems. Application to the mensuration of surfaces and solids. (½ unit)

6. Trigonometry

Definitions and relations of the six trigonometric functions as ratios; circular measurement of angles. Proofs of principal formulas, in particular for the sine, cosine, and tangent of the sum and the difference of two angles, of the double angle and the half angle, the product expressions for the sum or the difference of two sines or of two cosines, etc.; the transformation of trigonometric expressions by means of these formulas. Solution of trigonometric equations of a simple character. Theory and use of logarithms (without the introduction of work involving infinite series). The solution of right and oblique triangles, and practical applications. (½ unit)

7. Physics

The equivalent of one year's work in the high school, including both laboratory and text-book work. It is preferred that at least one-half the time be given to laboratory work in which the students perform individually such experiments as are described in the better class of laboratory manuals, of which Hall and Bergen's Physics may be named as an example. Accurate notes of the laboratory work should be kept. The text-book study should cover the ground of some modern text, of which Crew's Physics is a good example.

The desired preparation, both in laboratory and text-book work, is fairly represented by Sanford's Elements of Physics. (1 unit)

8. Chemistry

Besides the usual text-book and recitation work, each student must have a laboratory course in which he performs the experiments for himself. Accurate notes of the laboratory work should be kept. The necessary amount of laboratory work cannot be obtained in less than four hours per week for one school year, in addition to the classroom work. It is preferred that the laboratory work be entirely devoted to illustration of the important facts and principles of general chemistry, rather than partly to analytical chemistry. (1 unit)

Students who receive entrance credit on recommendation, and who wish to continue the study of chemistry in the University, will be admitted at once to the second half of course *a*, and will be required to begin course 1.

9. Physiology

The elements of human physiology and hygiene, the equivalent of

Martin's Human Body. The text-book work should be accompanied by experiment, dissection of animals and organs, and a certain amount of study of the tissues with the microscope.

Candidates who have taken only the work in elementary physiology and hygiene done in the grammar or intermediate grades are not prepared to offer the subject for entrance credit. The elementary physiology and hygiene of the grammar grades in this regard, is in the same category as are the other subjects studied in the grammar grades, such as arithmetic and geography, which are assumed as preliminary to the subjects offered for entrance. (1 unit)

10. Botany

The requirements outlined by the College Entrance Examination Board (based on the report of the Committee on Botany of the Science Department of the National Educational Association, modified by a committee of the Society for Plant Morphology and Physiology) may be taken to represent approximately what is expected of the candidate for entrance credit in Botany. These requirements call for a full year's work, of which it is expected that at least two-thirds shall be genuine laboratory work. One-half of the year is to be devoted to the general principles of morphology, physiology, and ecology. In this work proper account should be taken of the lower plants as well as of the flowering plants. The second half-year is devoted to a study of the natural history of representatives of the larger groups of plants, and the principles of classification. This study is expected to include representatives of the algæ, fungi, mosses, ferns, and the principal types of flowering plants. If it seems desirable, the order of the two half-years' work may be reversed or combined in a different way (Stevens's Introduction to Botany (Heath & Co., 1902) may be mentioned as indicating the scope of the work.)

In preparing to meet the requirements in Botany, the main thing to bear in mind is that the work shall be of a practical nature; that the study be mainly specimens and not books. A study of the growth and development of the forms selected is of the highest importance, and should be made a prominent feature in the work.

If possible, the student should be allowed the use of a compound microscope; but when this is not practicable, microscopic demonstrations by the instructor are indispensable. The laboratory work of the students may be supplemented by such explanatory and text-book work as may be deemed necessary; but this must be understood to supplement and not to replace the laboratory work.

Notes and drawings should be neatly made in blank books of mod-

erate size. The paper for the drawings should be white, unruled, hard, smooth, but not glazed. A hard pencil should be used in drawing, and accuracy and neatness are both to be emphasized. The descriptive notes should not be written upon the same sheets as the drawings, and should be clear and concise, including only what the student has himself seen. Notes taken from lectures or reading should be kept entirely apart from the student's own observations.

No credit will be given for an herbarium. The time necessary to prepare an herbarium may be better devoted to a study of the living plants. (1 unit)

11. Zoology

The candidate should possess a knowledge of the structure and relationships of a series of animals, gained primarily through the study of living forms and the dissection of specimens in the laboratory. At least four hours per week for one school year should be spent in actual laboratory work, which should include a study of the following forms, or their equivalent; amœba, paramœcium, hydra, starfish, sea-urchin, earthworm, crayfish, grasshopper, clam, slug, squid, dogfish, pigeon, rabbit. Laboratory note-books, certified by the instructor, should be submitted as evidence of the nature of the work, and should contain a full series of drawings and notes based on original dissections made by the student.

The practical work indicated above should be supplemented by such lectures or reading as will furnish a comprehensive knowledge of the groups studied. As a general reference book Parker & Haswell's Text-book of Zoology (Macmillan & Co., 1897) is recommended.

(1 unit)

12. Biology

A course of study and laboratory work extending through one school year, the time divided equally between two of the following subjects: Physiology, Botany, Zoology. The character of the work is indicated under the respective statements of subjects 9, 10, and 11. (1 unit)

13. Hygiene

The requirements in Hygiene are based on adequate instruction in personal hygiene, the hygiene of occupation, and the relation of the citizen to the State in matters of sanitation and public health. The course should give the student a basis for intelligently meeting his individual problems of health in any environment, rational habits of regular exercise, practical knowledge of general hygiene and sanitation, and familiarity with the real dangers of transmissible diseases and the methods of controlling them.

Six laboratory periods per week of physical training and experimental work on the hygiene of the individual and the home, and two recitations per week on Public Health throughout the year, constitute the minimum requirements in this subject. A list of approved reference books will be furnished by the Department of Hygiene upon application.

NOTE.—In order to encourage the introduction of this subject without displacing other subjects in the High School curriculum, the following plan of distributing the work over several years of the course is suggested:

FIRST YEAR.—(*a*) One physical training period three times per week; (*b*) one demonstration or field trip per week in the systematic study of personal hygiene.

SECOND YEAR.—(*a*) One physical training period three times per week; (*b*) one inspection trip per week in a prescribed study of the hygienic conditions of the various occupations.

THIRD YEAR.—(*a*) Gymnasium work and athletics optional; (*b*) two recitations per week on the principles of public health: this should consist of text-book work and carefully planned laboratory and field demonstrations. The class as a whole should construct a sanitary map of the community. (1 unit)

14-17. History

Candidates for credit in entrance History must submit evidence of considerable work done in addition to the text-book preparation. For the sake of the training involved, as well as for the information acquired and the stimulating of interest, the following exercises are recommended: Supplementary reading, including the use of original material where possible; notes and digests of reading; abstracts or analyses of specified chapters, both of the text-book and supplementary reading; outlines of subjects, gathering material from all available sources; map drawing from printed data or comparison of existing maps, showing movements of exploration, migration or conquest, territorial changes, or social phenomena.

Such work should be regarded as a means rather than the end of historical study, and in every instance should be adapted in character and amount to the stage of advancement of the class and of the individual pupil. As the pupil progresses in his study, more advanced work may well be required in the form of historical composition, and of note-taking in the class from talks by the teacher or reports of fellow pupils.

The evidence of such work may be presented in the form of a note-

book or bound collection of notes, containing all exercises prepared upon any of the four history subjects arranged in order of their assignment and certified and approved by the teacher. In the case of schools whose recommendations are accepted in place of the examinations, a detailed statement as to the character, amount, and quality of the work of each candidate may be submitted in place of the note-book itself.

14. Ancient History

Text-books: *The Oriental Nations*—Myers, General History, pp. 1-86; or West, Ancient History, pp. 1-75; or an equivalent. *Greece*—Botsford, History of Greece; or Myers, History of Greece; or Morey, Outlines of Greek History; or Oman, History of Greece; or West, Ancient History; or the equivalent. *Rome*—Botsford, History of Rome; or Myers, Rome; or West, Ancient History; or Morey, Outlines of Roman History; or an equivalent.

For supplementary reading and reference: Botsford, Story of Rome; Munro, Source Book of Roman History; "Epochs of Ancient History" Series; Wolfson, Essentials in Ancient History; Cox, General History of Greece (Student Series); Pelham, Outlines of Roman History; Abbott, Roman Political Institutions; Shuckburgh, History of Rome; Ginn & Co.'s Classical Atlas, or Kiepert, Classical Atlas; Tozer's Primer of Classical Geography. See, also, Historical Sources in Schools, and A History Syllabus for Secondary Schools. (1 unit)

15. Mediæval and Modern History

Text-books: Myers, Mediæval and Modern History; or Robinson, History of Western Europe; or, Harding, Essentials in Mediæval and Modern History; or the equivalent.

For supplementary reading and reference: Robinson, Readings in European History; West, Modern History; Duruy, History of the Middle Ages; Adams, Civilization During the Middle Ages; Bemont and Monod, Mediæval Europe; Munro and Sellvry, Mediæval Civilization; Fyffe, History of Modern Europe (Popular Edition); Seignobos, Political History of Europe since 1814; the "Epochs" Series; University of Pennsylvania, Translations and Reprints; Fling, Studies in European History; Putzger, Historischer-Schul-Atlas. See, also, Historical Sources in Schools. (1 unit)

16. History of England

Text-books: Andrews, History of England; or Coman and Kendall, History of England; or Cheyney, A Short History of England; or Gardiner, Student's History of England; or Ransome, Advanced His-

tory of England; or Larned, History of England; or Oman, History of England; or Walker, Essentials in English History; or Wrong, History of the British Nation; or Terry, History of England; or an equivalent.

For supplementary reading and reference: Bright, History of England; "Epochs" Series; Green, Short History of the English People; Traill, Social England; Larned, History for Ready Reference; Porritt, The Englishman at Home; Adams and Stephens, Select Documents of English Constitutional History; Colby, Sources of English History; English History Illustrated from Original Sources; Kendall, Source Book of English History; Translations and Reprints; and Gardiner, School Atlas of English History. Desirable references are to be found in Andrews, Cheyney, Coman and Kendall, Larned, and Wrong. See, also, Historical Sources in Schools: A History Syllabus for Secondary Schools; and Reference Books recommended by the University of Wisconsin. (1 unit)

17. American History

Text-books: McLaughlin, History of the American Nation; or Channing, Students' History of the United States; and Ashley, American Government; or Hinsdale, American Government; or Clark, Outlines of Civics, and Bryce, American Commonwealth (abridged edition); or equivalents.

For supplementary reading and reference: "Epochs of American History" Series; the "American History" Series; Hart, American History Told by Contemporaries; MacDonald, Select Charters, Select Documents, and Select Statutes; and McCoun, Historical Geography of the United States. See, also, Historical Sources in Schools.

(1 unit)

18-19. Spanish and French

The requirements in Spanish and French are the equivalent of those recommended by the Committee on College Entrance Requirements of the National Educational Association.

The Elementary study of the languages, covering two years of daily recitations, should lay stress on the following points:

1. An accurate knowledge of the forms of the languages including the inflections, conjugations, and principal parts of verbs. Particular attention should be devoted to this part of the subject; constant drill in the verbal inflections, both written and oral, and dictation exercises of various kinds, are recommended. 2. The elements of syntax, such as the uses of the article, the personal pronouns, the subjunctive, the partitive constructions, and the agreement of the participles. 3. The

ability to turn easy English prose into French or Spanish. 4. The ability to translate ordinary French or Spanish into idiomatic English. 5. The ability to pronounce French and Spanish correctly. It is believed that a fairly good pronunciation can be obtained in the fitting schools, if the necessary time is devoted to the subject. Pronunciation should be studied both theoretically and practically, and the characteristics of vowel qualities, of stress, pitch, and intonation should be pointed out.

The Intermediate requirements are intended to represent a third year of daily recitations. The specific demands are:

1. A thorough knowledge of modern French and Spanish syntax. 2. The ability to turn ordinary modern French and Spanish at sight into idiomatic English. 3. The ability to translate connected English prose of moderate difficulty into French or Spanish. 4. The ability to write French or Spanish from dictation.

The Advanced requirements in French will occupy a fourth year of daily recitations. At the end of this course the student should be able:

(1) To read at sight any standard author not earlier than the seventeenth century; (2) to write in French a short essay on some simple subject connected with the works read; (3) to translate correctly a passage of modern English prose; (4) to carry on a simple conversation in French; (5) to follow a lecture in French.

For all grades the examination will include a test of pronunciation and the writing of French or Spanish from dictation.

The reading in the Elementary course should cover from four hundred to six hundred duodecimo pages; for the Intermediate requirements a similar amount should be read of prose and verse, a portion to be in the dramatic form; and for the Advanced requirements the same quantity of prose and verse should be selected from standard authors not earlier than the seventeenth century, and these should be read with reference to their literary value.

The practice of writing compositions consisting in reproductions or paraphrases of the matter read should be begun in the Intermediate course and followed by short themes along similar lines in the Advanced course.

No definite text-books are prescribed, but the books named below will be found adequate for the mastery of these requirements.

18. Spanish

a. Elementary.—Hills and Ford's Spanish Grammar (Heath & Co.), or Garner's Spanish Grammar (American Book Co.); Ramsey's Ele-

mentary Spanish Reader (Holt & Co.); Matzke's First Spanish Readings (Heath & Co.); Tamayo y Baus, Un Drama Nuevo (Jenkins, New York); Valdés, José (Heath & Co.); Alarcón, El Capitán Veneno (Heath & Co.). (2 units)

b. Intermediate.—Umphrey, Spanish Prose Composition (American Book Co.), or Ramsey's Elementary Spanish Text-book (Holt & Co.); Ramos y Vital, Zaragueta (Silver, Burdett & Co.); Caballero, La Familia de Alvareda (Holt & Co.); Alarcón, El Niño de la Bola (American Book Co.); Moratín, El Sí de las Niñas (Ginn & Co.); Echegaray, El Gran Galeoto (Koehler, Boston). (1 unit)

19. French

a. Elementary.—Fraser & Squair's French Grammar and Reader, Part I (Heath & Co.), or Whitney's Practical French Grammar, Part I (Holt & Co.), or Grandgent's Essentials of French Grammar (Heath & Co.), or Chardenal's Complete French Course (Allyn & Bacon), or François' Beginners' French (American Book Co.); Super's French Reader (Heath & Co.), or Aldrich & Foster's French Reader (Ginn & Co.), or François and Giroud's Simple French (Holt & Co.); Dumas, La Tulipe Noire; Halévy, L'Abbé Constantin; Labiche, Le Voyage de Monsieur Perrichon; Mérimée, Colomba. For the study of pronunciation, Matzke's Primer of French Pronunciation (Holt & Co.) is recommended. (2 units)

b. Intermediate.—Fraser & Squair's French Grammar and Reader, Part II (Heath & Co.), or Whitney's Practical French Grammar, Part II (Holt & Co.), or Edgren's Compendious French Grammar (Heath & Co.), or François' Advanced French Composition (American Book Co.); George Sand, La Petite Fadette; Balzac, Eugénie Grandet; Victor Hugo, Hernani (Heath & Co.); Fontaines, Historiettes Modernes (Heath & Co.). (1 unit)

c. Advanced.—Selected plays of Corneille, Racine, or Molière; La Fontaine, Fables. Selections from the writings of Rousseau or Voltaire; Lamartine, Grogiella; Hugo, Ruy Blas; Rostand, Cyrano de Bergerac; Renan, Souvenirs d'enfance et de jeunesse; selected works of Balzac, Maupassant, Daudet, and Anatole France; Modern French Lyrics. (1 unit)

20. German

The requirements in German are essentially those recommended to the National Educational Association by its Committee on College Entrance Requirements, but more emphasis is put upon the acquisition of power as distinguished from learning.

a. Elementary.—The ability to read understandingly easy German prose and verse at sight; an accurate knowledge of the most important elements of grammar, embracing especially inflections, word-order, and the essentials of syntax, as also the ability to appreciate the force of prefixes and suffixes; the ability to express in correct German simple ideas concerning familiar things; the ability to make oral use of the German learned and to recognize German words and simple sentences when spoken. Careful attention should be given to pronunciation and accentuation, in order to insure the power to read German fluently and intelligently.

This preparation is represented, approximately, *in reading,* by material of the character of Thomas and Hervey's Reader, and the careful study of one or more modern dramas (about two hundred duodecimo pages of easy German), supplemented by the reading of German lyrics and ballads, a number of which should be memorized; *in composition,* by daily practice in reproducing in one form or another the German read and in writing in German. (2 units)

b. Intermediate.—The ability to read intelligently ordinary German prose and verse at sight; some knowledge of word-formation and derivation; practical familiarity with the principles of syntax, with special reference to the uses of the tenses and cases, the modal auxiliaries, and the moods; increased ability to write and speak German.

It is believed that this preparation can be acquired by continued practice such as is suggested above, in connection with the careful reading of five hundred duodecimo pages of contemporary and classical prose and verse, in addition to the reading required for Elementary German. It is recommended that about one-half of this reading be selected from the works of living or recent writers, such as Otto Ernst, Storm, Keller, Freytag, etc.; and the other half from such classics as Lessing's Minna von Barnhelm, Schiller's Wilhelm Tell, and Goethe's Wahrheit und Dichtung. Particular attention should be paid to the literary value of the works read. It is also desirable that candidates should acquire the ability to understand and take part in a recitation conducted in German. (1 unit)

c. Advanced.—A fourth unit in German may be given to candidates who fulfil, in addition to the preparation required in Elementary and Intermediate German, the following requirements: A firmer hold on the important elements of German grammar; a thorough knowledge of at least two of the following classics: Goethe's Hermann und Dorothea or his Iphigenia, Lessing's Nathan der Weise, and Schiller's Wallenstein, as well as of two or more recent dramas, all of which should be studied

as much as possible with an eye to the appreciation of their literary value; some familiarity with the technical language of literature and science; the ability to compose in German with ease and to follow lectures delivered in German. (1 unit)

21. Latin

a. Elementary.—The requirements for Elementary Latin are as follows: 1. An accurate knowledge of the ordinary forms of the language. 2. The ability to pronounce Latin so as to observe the proper quantity of vowels. 3. A familiarity with the ordinary rules of syntax. Particular attention should be devoted to these three points. 4. The ability to translate easy Latin prose into English. 5. The ability to turn simple English sentences into Latin.

For 1909-10 the examinations in translation will be based on the first four books of Cæsar's Gallic War, but approved schools may use an equivalent Latin text. Some attention should also be paid to translation at sight from easy prose. (2 units)

b. Advanced.—The requirements for Advanced Latin include those for Elementary Latin, together with the following: 1. Continued training in Latin forms and syntax. 2. Knowledge of the rules of prosody, and ability to scan Virgil's hexameters. 3. The ability to translate from Cicero's Orations. 4. Careful preparation of the first, second, fourth, and sixth books of Virgil's Æneid, with less detailed knowledge of the third and fifth books. 5. The ability to turn into Latin connected English of simple style.

For 1909-10 the examinations in translations will be based on the Virgil assigned and on Cicero's Orations against Catiline, for Archias, and for the Manilian Law; but approved schools may use any equivalent Latin prose text, and are recommended to add Sallust's Catiline and other speeches of Cicero to the minimum given above. All schools should pay some attention to the translation of prose at sight, and the examination will include a passage from Cicero to test the ability of candidates in this respect. Credit in Advanced Latin is distributed as follows: Cicero, ½ unit; Virgil, ½ unit; Third-year Composition, ½ unit; Fourth-year Composition, ½ unit. (2 units)

22. Greek

a. Elementary.—Grammar, the inflections, the formation of words, and the essential points of syntax; Xenophon's Anabasis, Books I-IV, or an equivalent; prose Composition (Collar and Daniell's text-book is recommended); translation at sight of easy prose. It is expected of every student that he be able to read Greek aloud without stumbling. (2 units)

b. Advanced.—Homer, Iliad, Books I-III, or an equivalent; advanced prose composition. The candidate must show a thorough acquaintance with the forms and syntax of Homer, and must be able to scan any given passage exactly and to read it rythmically. In the writing of Greek the candidate should have a year's training beyond that required in Elementary Greek. (1 unit)

23. Freehand Drawing

The requirements assume instruction for 240 hours of 60 minutes each, arranged to extend through a period of a year. Approximately two-thirds of this time should be given to representation and pictorial composition and one-third to decorative and constructive design.

A. Representation.—Object drawing, boxes, books, bowls, vegetables, machine parts, drawn in various positions with attention to perspective facts in line and also to light and shade.

Plant forms, seed pods, shells, insects, animals, and simple landscape, drawn in line, in light and shade, and in color.

The style of drawing should be direct, facile and effective, adapted to the thing drawn, with refinement in its proper place and vigor in its proper place. The candidate should be equally familiar with the use of pencil and charcoal or brush.

Composition, exercises in arrangement and adaptation of pictorial subjects into good composition, using both rhythmic line arrangement and harmonious color.

B. Design.—(1) Exercises in space filling, borders and all-over patterns with use of geometric and organic forms. (2) Principles of constructive and decorative design applied to simple objects, as: in printing, a title page or program; in textiles, a stencil or embroidery design for a curtain or table scarf; in wood, working drawings for a chair, table, clock-case, book rack, etc.; in metal, cabinet hardware and lighting fixtures, etc. Talks supplemented by photographs of the best paintings and architecture, and talks upon taste in home furnishing and appointments, with visits to worthy examples should supplement the course, with a view to developing an enlightened taste in art.

Candidates for credit must show drawings and note books. The examination will consist of two parts, one in representation, one in the execution of a problem in applied design. The candidate is expected to provide himself with the materials—paper, pencil, charcoal, brushes, and color—which he will use in the examination.

24. Mechanical Drawing

Full unit credit equivalent to about two hundred and fifty hours of work under instruction.

The candidate is expected to have acquired neatness and accuracy in the use of drawing instruments. His course should have included practice in line work, lettering, machine or architectural working drawings, and tracing; recognition, commensurate with the length of course and the degree of proficiency attained in the use of instruments, will be given, however, to those courses consisting of line work, lettering, and the construction of geometric figures. He should present for inspection as much of his work as is possible, duly certified by his teachers. As an examination the candidate may be called upon to make a simple drawing of some specified object; he should provide his own material for the examination, as follows: T-square, triangle, instruments, pencils, eraser, scale, thumbtacks, and sheet of drawing paper not smaller than 12x18 inches. (½ or 1 unit)

Geometrical Drawing, representing one daily exercise during one school year, following the course in Freehand Drawing, may be offered as a substitute for Subject 24. The requirement calls for continuous training in the use of drawing instruments in the solution, by graphic methods, of such geometric problems as shall emphasize the necessity of accuracy and neatness. The course should be a general one, affording preparation for technical drawing in Engineering as well as for the purposes of business life.

25-28. Shopwork

Two things will be expected of candidates for entrance credit in these subjects; first, manual dexterity, as evidenced by neatness, accuracy, and dispatch in the execution of a given piece of work; second, a knowledge of the materials and tools used, and a thorough understanding of the principles involved in the operations.

Candidates who have been trained in manual training schools or in commercial shops should present letters from their teachers or employers stating clearly and in some detail the time they have been employed, the kind of work they have done, and its quality. The examination may be oral, written, the actual execution of a set piece of work, or all combined. In each subject the ability to read and follow a working drawing is expected.

25. Woodworking

The ability to recognize the common varieties of wood and some knowledge of their physical properties, such as ease of working, strength, toughness, hardness, etc., is expected. Candidates must be familiar with the uses of the principal hand tools of carpentry and with their care. They should be able to make the ordinary kinds of

joints and splices. They should be familiar with the operation of the lathe, jig-, band-, and circular-saws, and planing machines.

Equivalent to about two hundred hours of work under instruction in a manual training school, or a year in a commercial shop.

(½ unit)

26. Forge Work

This demands an elementary knowledge of the properties of wrought iron and steel, and of the proper heats at which to work them. The management of forge and fire and the nature and uses of all the ordinary blacksmithing tools should be known. The candidate must be able to execute all of the common forging processes, including the various forms of welds in iron and steel; he is also expected to understand hardening, tempering, and annealing.

Equivalent to about two hundred hours of work under instruction in a manual training school, or a year in a commercial shop.

(½ unit)

27. Foundry Work

The candidate should have a knowledge of the tools and processes used in the ordinary forms of green sand moulding and core work. He should be familiar with the cupola and know how to charge and operate it. He must have a knowledge of the properties of cast iron, and should have had experience in pouring cast iron as well as in moulding.

Equivalent to about two hundred hours under instruction in a manual training school, or a year in a commercial foundry.

(½ unit)

28. Machine Shop

A knowledge of the tools and processes used in the working of iron, steel, and brass is demanded of the candidate. He should be able to execute all forms of vise-work, such as chipping, filing, scraping, fitting, and finishing. He must be familiar, through experience in operation, with the simpler forms of machine tools, such as the lathe, drilling machine, planer, shaper, and milling machine.

Equivalent to about four hundred hours under instruction in a manual training school, or two years in a commercial shop.

(1 unit)

II. SPECIAL STUDENTS

Persons under twenty-one years of age will not be received as special students.

The privileges extended to special students are not intended for

those who come directly from the schools, with insufficient preparation for regular standing, but for those who are qualified by age, character, practical experience, and habits of study to profit by university courses. (On account of the limitation upon the number of women students, women are not admitted as special students.)

Persons under twenty-five years of age, not graduates of some approved high school or equivalent preparatory school, will be admitted only upon passing entrance examinations in subjects aggregating at least five units. The candidate may usually select the subjects in which examinations shall be taken, but engineering students must include elementary algebra and plane geometry.

Special students are subject to the same University regulations as regular undergraduates, and they may become candidates for graduation upon fulfilling all University requirements (see p. 58).

Blank applications for admission as special students may be obtained from the Registrar.

III. ADVANCED STANDING

Students from other institutions of recognized collegiate rank, who present letters of honorable dismissal, may be admitted to such standing and upon such terms as the Faculty may deem equitable. Students from institutions of equivalent rank, who maintain a satisfactory record after admission, may expect to receive the same standing as at the former institution, except that no such student can be given more than three years' advanced credit (ninety unit-hours toward graduation), and that differences in standard of entrance preparation will be taken account of. Every candidate is required to present, along with a catalogue of the institution in which he has studied, a full statement, duly certified, of the studies he has completed, including studies passed or credited at entrance.

Recommended graduates of approved State Normal Schools where the normal training has been preceded by a full four years' high school course, or where high school and normal school courses together cover six years' work, may be granted an advanced credit of not more than thirty units.

Blank applications for admission to advanced standing may be obtained from the Registrar.

All applications for advanced standing on the basis of work done before entering the University must be filed within two years after matriculation; and such applications will not be received at a later date.

IV. GRADUATE STANDING

Graduates of institutions of recognized collegiate rank may be admitted to graduate standing in the University upon presentation of diplomas or equivalent credentials. Admission to technical graduate standing does not imply admission to candidacy for an advanced degree (for the conditions of such candidacy see p. 66). If graduates of other universities desire to become candidates for the baccalaureate degree, the question of units required for graduation may be waived, upon approval of the Committee on Admission and Advanced Standing, and the degree conferred on the satisfactory completion of not less than thirty units of University work and the fulfillment of all major and minor requirements. Graduate students not candidates for any degree, may be permitted, upon the approval of the major department, to undertake such work as their previous training seems to warrant.

UNIVERSITY RESIDENCE

Registration

On the appointed Registration Days, in August and January, each student must obtain a certificate of registration *in person*, at the Registrar's office.

Matriculated students may register after the appointed Registration Days and during registration week, upon payment of a special fee of two dollars; during the week following the fee for late registration will be four dollars; after that the fee will be increased one dollar for each week's delay. Registration of undergraduates and specials will not be permitted later than one month after the beginning of instruction.

Study Card

At the Registrar's office the student receives a card for selection of studies for the semester. This card, properly filled out, and approved by the major department, must be filed with the Registrar not later than the Friday following Registration Day; but late study cards will be accepted upon payment of a special fee of two dollars. Students registering after the Friday of registration week, must have their study cards indorsed by all the instructors under whom work is taken. All work for which University credit is desired must be duly registered.

Enrollment in Classes

A student desiring to enter any class must present his certificate of registration to the instructor for enrollment at the beginning of each semester. Whether the student is qualified for enrollment in any particular class is a question to be decided by the instructor in charge. In general, the prerequisites for taking any given course are noted under "Courses of Instruction."

Change of Studies

A student desiring to drop a subject once taken up, or to take up a new subject after the study card has been filed, must present to the Committee on Registration a petition for such change, approved by the major department and by the instructors whose subjects are to be taken or dropped. In general, petitions so approved, if they do not give the student too many unit-hours, or too few unit-hours, and if presented within one month after the beginning of the semester, are granted without question. If presented at a later time in the semester

they will be granted only for extraordinary reasons, and, where the taking up of new subjects is involved, only on payment of a special fee of two dollars for each course; if otherwise acceptable but presented after the close of the semester, they will be granted only on payment of a special fee of four dollars for each course. In the case of petitions to drop subjects during the last six weeks of the semester, action will be deferred until the close of the semester.

Change of Major Subject

Petitions to change the major subject will be granted when approved by the departments in charge of both the old and the new subjects, the student being held to all the requirements of the new major subject. (First-year students may change their major subject at the end of the first or second semester without petition.) In general, the major subject may be changed at the end of the first year, and in some cases later, without appreciable loss of time to the student.

Amount of Work

Fifteen hours per week of recitations or lectures or an equivalent in laboratory work, constitutes an average semester's work. In general, students may register for as few as *thirteen* or as many as *eighteen* unit-hours; but in the case of students doing outside work for self-support or otherwise, and where considerations of health are involved, special restrictions will be made upon recommendation of the professor of hygiene; and where conditions or failures have been incurred in the preceding semester, not more than *fifteen* units may be registered unless by special permission of the Committee on Registration granted in advance. Permission to register for less than *thirteen* units may also be granted for special reasons; but registration for less than *ten* units will not ordinarily be accepted. Not more than eighteen units may be credited toward graduation for any semester's work, unless, in exceptional cases, permission to register for additional units is granted in advance. Graduate students are not held to any special number of unit-hours, but registration will not ordinarily be permitted unless such students are prepared to devote at least half of their working time to University study. Petitions for irregular registration should be presented at the beginning of the semester.

Every unit for which credit is given is understood to represent approximately, for the average student, three hours of actual work per week, through one semester. Thus, in lecture or recitation work, for one unit of credit one hour per week may be allotted to the lecture or recitation and two hours for preparation or subsequent reading and

study on the part of the student; but if a less amount of time is allotted for preparation or subsequent reading or study, there shall be a proportionate decrease in the amount of credit. Where the time is wholly occupied with drawing, field, or laboratory work, or in the class-room work of conversation classes, three full hours per week through one semester are expected of the student for each unit of credit; but where such work is supplemented by systematic outside reading or experiment under the direction of the instructor, such a reduction may be made in the actual drawing, field, laboratory, or class-room time as seems just to the department concerned.

Conditions and Failures

A student conditioned in any subject may arrange with the instructor concerned for such supplementary examinations or study as will make good the deficiency; but such deficiency must be removed within one year after the condition is incurred, otherwise the condition will be considered a failure. Work reported as incomplete may be made up during the first or second semester's registration after the incomplete is incurred; but if not made up until the second semester, the incomplete work shall be duly entered on the student's study card and shall count as part of the permitted registration for that semester to the extent of the actual unit-hours required for making up such incomplete work as estimated by the instructors concerned. A student failing in any subject cannot receive credit for the portion in which the failure is incurred until the subject has been re-registered and taken over again in class. A condition or failure or withdrawal from class without permission of the Committee on Registration, limits the student to *fifteen* units the semester following.

Mid-semester reports on scholarship are obtained from all instructors, and students reported as doing unsatisfactory work are notified of their deficiencies. A student whose work is unsatisfactory may be placed on probation at any time. At the middle and at the end of the semester each department shall be notified of all serious deficiencies in scholarship affecting students whose major work is in that department.

A student who receives passing grades in less than half the work for which he is registered during his first semester, or in less than two-thirds during any subsequent semester, shall be deemed to have failed in his studies. After a first failure, unless unusually serious, a student may, with the approval of the major department, again register in the University, but shall be placed on probation for one semester. A second failure shall result in withdrawal from the University. Work

marked "incomplete" will be considered of passing grade only when reported as satisfactory in quality and not seriously deficient in quantity.

A student whose delinquency is unusually serious, or is the result of persistent neglect, may be required to withdraw from the University at any time.

Leave of absence will not generally be granted to a student on probation, nor to any student whose work during the current semester is unsatisfactory, unless applied for at least six weeks before the end of the semester.

A student on probation may not take part in any inter-collegiate contest, nor represent the University in any way, whether individually or in connection with any athletic, literary, musical, dramatic, or other organization.

From Special to Regular Standing

Special students may be entered in regular standing and become candidates for graduation, on passing examinations in the required number of entrance subjects, provided such examinations are passed not later than two years after matriculation. In place of entrance examinations, university work to the amount of five units for each entrance deficiency may be offered in university subjects which are also included in the entrance group.

A special student who has completed one hundred and fifty units of university work, including all major requirements, and whose general university record is deemed proof of superior scholarship, may become a candidate for graduation on approval of the Committee on Admission and Advanced Standing. Petitions to this end will not be considered by the Committee until after the student has completed one hundred and twenty units of university work.

University Credit for Extra Entrance Subjects

Credit toward graduation may be given for entrance subjects in excess of the number required for admission, provided such extra entrance subjects are also university subjects, and are successfully continued in the University within two years after matriculation, and provided the student's general University record is deemed proof of superior scholarship. In general, three units of advanced credit will be granted for each extra entrance unit representing elementary work in a given subject, and five units of advanced credit for each extra entrance unit representing advanced work. Applications for such university credit must be made within two years after matriculation.

After matriculation additional entrance units may be offered only for the purpose of making up entrance deficiencies.

University Credit for Special Courses

University credit is given only for work done in residence at the University. Work prescribed by any professor of such a nature that it cannot be done at the University or can be more advantageously done elsewhere may be regarded as work done in residence. But such special work must be duly registered in advance; or, if not registered in advance but approved later, may be credited only upon payment of a special fee of two dollars for each course.

Matriculated students on leave of absence may take work in other universities, usually without any restrictions other than those imposed by the university in question. But work undertaken in any Summer Session may be subject to special regulations, and must be approved in advance by the major department and by the department in which the work is to be taken; or, if not registered in advance but approved later, may be credited only upon payment of a special fee of two dollars for each course. The last semester's work of every candidate for a degree must be taken in this University.

Advanced Standing

Advanced standing for work done before matriculation will generally be given only when certified as having been completed in some institution of recognized collegiate rank, except as provided above for extra entrance units, or, in particular cases, to recommended graduates of approved State Normal Schools (see p. 53). But in special cases permission may be given by the Faculty to receive credit on examination for work equivalent to regular University courses. Application for such examinations, with satisfactory evidence of the work accomplished, must be presented to the Committee on Advanced Standing. Applications for advanced standing on the basis of work done before entering the University must be made within two years after matriculation.

Leave of Absence

A student desiring to leave the University for a brief time should apply to the Committee on Registration. If leave of absence is desired on account of sickness, the petition must be indorsed by the professor of hygiene. A leave of absence is merely a justification of the absence and not a relief from the work that has been missed. A leave of absence is usually necessary only in case of interrupted work; a student in good standing absent one or more semesters may re-enter at the beginning of any semester without formal petition.

Honorable Dismissal

An honorable dismissal means that the student is permitted voluntarily to withdraw from the University and is commended to the favorable consideration of any institution he may wish to enter. An honorable dismissal may be granted upon written application to any student not under discipline for misconduct.

Conduct of Students

In the government of the University the largest liberty consistent with good work and good order is allowed. Students are expected to show both within and without the University such respect for order, morality, personal honor, and the rights of others as is demanded of good citizens. Failure to do this will be sufficient cause for removal from the University.

In 1908 the Board of Trustees of the University provided that in all future rentals or leases of houses as fraternity chapter houses it shall be expressly stipulated that no intoxicating liquors of whatever kind shall ever be sold or used on the premises. The Trustees also by formal resolution requested the Academic Council to prohibit the use of liquor in fraternity chapter houses, student club houses, and other student lodgings.

This action of the Board of Trustees is in harmony with the instructions given by the Academic Council to its Committee on Student Affairs, and defines the policy of the University. Prohibition of the use of liquor extends to all student lodgings whether on the campus or elsewhere. The University assumes that the act of registering as a student implies full acceptance of this policy.

Expenses of the Student

Tuition and Registration Fees

The Constitution of the State of California, as amended November 6, 1900, authorizes the Legislature, under certain conditions, to exempt the property of the University from taxation, provided residents of California are charged no fees for tuition unless such fees shall be authorized by the Legislature. An Act of the Legislature, approved February 14, 1901, "exempting from taxation a portion of the property held in trust for the benefit of the Leland Stanford Junior University," as amended in March, 1907, provides "that while this Act is in force no fees shall be charged residents of this State for tuition, except that such fees may be charged in professional and engineering courses, but no such fees shall be charged to any student who is registered in any such courses when this Act takes effect."

Tuition fees are charged in Law, for professional law courses, as follows: for students registering for thirteen or more units in law in any semester, *twenty-five dollars* per semester; for students registering for less than thirteen units in law for any semester, *two dollars* per unit per semester.

The tuition fee in the Department of Medicine is *one hundred and fifty dollars* per year.

Graduate students in Law and Engineering, and all undergraduates, are charged a registration fee of *ten dollars* per semester; special students, *fifteen dollars* per semester. But these registration fees are waived in the case of *bona fide* residents of California who have been resident in the State at least one year immediately preceding registration. Students in laboratory courses pay for the materials which they use, and in various courses syllabus fees are charged. Laboratory and syllabus fees are different for the different courses, ranging from *fifty cents* to *twenty-five dollars* per semester.

A diploma fee of *five dollars*, payable before Commencement in May, is charged all persons receiving degrees from the University.

Cost of Living

The cost of living in Roble Hall, including board, room, light, heat, and attendance, averages about twenty-seven dollars per month. Students furnish their own linen, blankets, and towels. Requests for reservation of rooms should be made to the Matron of Roble Hall.

Rooms in Encina Hall, furnished similarly to those in Roble Hall, but without board, cost from $6.00 to $6.50 per month, with two in a room. There are a few single rooms at $8.00 per month. Students occupying a double room alone pay the full price of the room. Each double room is furnished with two single beds. Requests for reservation of rooms should be made to the Clerk of Encina Hall.

Students may live outside the Halls only in places approved by the University.

In Palo Alto and College Terrace, at an average distance of a mile and a quarter from the University, rooms and board, in private houses, can be obtained, at from twenty-five to thirty dollars per month. A considerable number of students live in co-operative clubs, in which the cost of board and room is reduced as low as eighteen dollars per month; such rooms are lighted and heated, but usually unfurnished. Special commutation tickets are issued by the Southern Pacific Company, and students living in towns on the line of the railway, from San Francisco to San Jose, easily go to and from the University daily. Carriages connect with all trains at Palo Alto.

On arriving at the University, new students may obtain information as to rooms and board at the Information Bureau conducted by the Christian Associations at the Palo Alto station and at the University. A complete list of approved rooms and boarding places will be provided. Particular inquiries may be addressed to the secretaries of the Christian Associations.

The University Inn, located near the Quadrangle, has dining accommodations for about three hundred students.

Books and stationery will average from eighteen to twenty-five dollars per year.

The necessary expenses of the student, exclusive of clothing and railway fares, range from $300 to $450 per year.

Memorial Scholarship

The Leland Stanford Junior Scholarship, established by Mrs. Stanford, in 1900, pays the necessary expenses of its holder throughout the undergraduate course. The present holder of the scholarship is Mr. R. Justin Miller, of Hanford, California.

Self-Support of Students

A considerable number of students manage, in one way or another, to earn the whole or a part of their expenses while attending the University. Such opportunities occur in the line of office and laboratory assistance, personal services of numerous kinds, the management of various student enterprises, agencies for laundries, etc.

The Student Employment Bureau (in charge of the Christian Associations) registers without charge all students who apply for employment, and supplies employers with student labor as demanded. In general, the demand and supply are nearly equal, but the attention of new students who intend to earn the whole or part of their living is called to the following results of past experience:

1. There is a constant *over-supply* of those wishing to do teaching and clerical work. None but those having superior qualifications and experience are likely to secure employment the first semester.

2. There is a considerable demand for efficient stenographers; also for men and especially women students who can do domestic labor of any kind; board and room rent may be earned by waiting on table, washing dishes, general housework, house cleaning, gardening, etc.

3. Students who can do any kind of domestic or manual labor *well*, and who have thoroughly good health, can earn their board by three hours' work per day, or board and room by four hours' work per day. Those who are bookbinders, printers, mechanics, or carpenters, will

have a decided advantage in obtaining employment. *But no student should come to the University without resources sufficient for the expenses of one semester.*

4. The University curriculum is adapted to those who have control of their entire time for study. The student who must earn his living, therefore, should expect to take less than the usual amount of University work.

5. No student should come expecting to earn money, who can do nothing well; skill is absolutely essential, as competition is quite as severe in the college community as elsewhere.

6. Opportunities for earning money during the summer vacations can usually be counted on, the demand for canvassers being most constant.

Particular inquiries concerning opportunities for self-support should be addressed to the Secretaries of the Christian Associations. Upon arrival at the University new students should report for registration and information to the Information Bureau of the Associations.

University Health Control

The University exercises an advisory control over student health affairs through the Committee on Public Health, whose Chairman is the University Health Officer.

Every student upon entering the University is required to report to the University Health Officer for a brief medical examination. General health, eyesight, hearing, and evidence of effective vaccination are the important factors in the examination. Any condition which may place a limitation on the amount or kind of work planned by the student is discussed with him or made the subject of a report to his major department or to the Committee on Registration.

Students intending to train for any of the athletic teams, or to register for gymnasium work, are required to pass a careful physical and medical examination at the beginning of each semester.

A careful inspection of all boarding and rooming houses in the community is carried out under the supervision of the Public Health Committee, and only those are permitted to register who arrange to live in houses which have been approved.

All students are entitled to medical consultation and to individual advice in other matters directly or indirectly relating to their health, at any time during the year; but no treatment is undertaken by the University.

Students' Guild

Provision for the care of all cases of serious illness is made by the Guild, which is a student organization now thoroughly equipped for its work. A hospital is owned and operated through the management of a Board of Directors composed of students and members of the faculty. Complete operating-room facilities and isolation-wards have been provided. The hospital is in charge of an executive nurse, with an adequate nursing and house-keeping staff.

All students are required to become members of the Guild by paying the fee, which for 1909-10 is two dollars each semester. A uniform hospital rate of one dollar per day is charged all members of the Guild.

The officers of the Guild for 1908-09 are as follows: President, Marion R. Kirkwood, '09; Vice-President, Ethel Rebecca Palmer, '10; Secretary, James Clayton Robbins, '10; Treasurer, William Henry Masters, '09; Board of Directors: The Officers, Professors Snow, Gilbert, and Swain.

GRADUATION

Candidates may present themselves for graduation in January, May, and September.

No degree will be conferred upon any person who has not spent at least one year in resident study at the University. No honorary degrees are given.

Bachelor of Arts

The degree of Bachelor of Arts (A. B.) is conferred upon candidates who have satisfactorily completed a total of one hundred and twenty units of University work and who have also satisfied the requirements in major and minor subjects.

Thirty units constitute a normal year's work (see p. 56), but the ordinary class divisions (freshman, sophomore, junior, senior) are not recognized by the University. The degree is conferred whenever the requirements are met, without regard to the time spent, except that at least thirty units (including the last fifteen) must be completed in this University.

Each student selects as his major subject or specialty the work of some one department. This department has the authority to require the completion of this *major* subject, and also of such *minor* subjects in other departments as may be considered necessary or desirable collateral work. Such major and minor requirements taken together will not (except in the departments of applied science) exceed forty units of University work, or one-third of the student's time during his undergraduate course.

A course in English Composition (English A) is a prescribed study for first-year undergraduates who do not satisfy the matriculation test.

With these exceptions, all the undergraduate work in all departments is elective. The student may freely choose for such elective work any subject taught in the University, which his previous studies have prepared him to undertake.

The department in charge of the major subject of any student is expected to act as adviser to the student in educational matters, and the recommendation of the department is necessary to graduation.

(A student in regular undergraduate standing who does not intend to become a candidate for the A. B. degree, may choose, with the

approval of the major department, any courses in the University which his previous training has prepared him to undertake.)

Candidacy for Advanced Degrees

Every applicant for an advanced degree must file at the Registrar's office not later than the beginning of the semester preceding that in which the degree is sought, a formal application including a statement of the proposed course of study. This application must be approved by the department faculty concerned, and upon acceptance by the Committee on Graduation the applicant is admitted to candidacy for such advanced degree. It is advisable that such application be made as early as possible in the student's course. Where a thesis is required it shall be upon a subject approved by the department and, if for the doctor's degree, shall be presented in its final form, to the Chairman of the Committee on Graduate Study, at least six weeks before the close of the semester in which the degree is sought. Accepted theses for the master's degree shall be bound in a uniform style and deposited in the University Library. No advanced degree will be conferred except upon the recommendation of the Committee on Graduate Study.

Master of Arts

The degree of Master of Arts (A. M.) is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion, in residence, of one year of graduate work, beyond the baccalaureate requirements of the department in which the degree is sought, and on the presentation of an approved thesis, or the passing of a satisfactory examination, or both. At least two-thirds of the year's work required of the candidate is to be devoted to the major study. Work done in the University outside of the requirements for the degree must be registered, but will not be taken into account in connection with the degree.

Special regulations are as follows:

1. A report upon the character of the work done will be made by each instructor under whom a candidate is registered.

2. Some evidence of ability to do independent work is required of every candidate. In addition, therefore, to examination, a thesis is expected, unless such evidence is furnished in other ways.

Engineer

In the departments of applied science the professional degree of Engineer is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satis-

factory completion, in residence, of one year of professional study beyond the baccalaureate requirements of the department in which the degree is sought, and on the presentation of an approved thesis, showing ability to do independent work.

Juris Doctor

The degree of Juris Doctor (J. D.) is conferred upon students who have previously received the academic degree of Bachelor of Arts, or its equivalent, upon the completion of a three years' professional law course as defined by the Department of Law.

Doctor of Medicine

The degree of Doctor of Medicine (M. D.) is conferred upon students who complete the four years' course in Medicine based upon the three years' pre-medical course as laid down by the University.

Doctor of Philosophy

The degree of Doctor of Philosophy (Ph. D.) is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion of at least three years of graduate work, beyond the baccalaureate requirements of the department in which the degree is sought, under the following conditions:

1. The degree is given only on the ground of advanced scholarship and the ability to do independent work in some special line, and not for merely faithful study for a prescribed time or course, nor for miscellaneous study. Three years represents the minimum time in which the degree can be obtained, and often a longer period of study will be necessary.

2. Graduate work done elsewhere may be accepted in place of resident study in this University; but in no case will private study without sufficient guidance, or pursued at a distance from libraries or laboratories or other necessary facilities, be accepted as an equivalent; and no degree will be granted to any person who has not spent at least the last year of such study in residence at this University.

3. All candidates will be required to show a reading knowledge of French and German, and this requirement must be fulfilled at least one year before the final examinations for the degree. The candidate's ability to read his special literature in these languages shall be tested by the faculty of the department in which the major subject is taken.

4. The course of study shall embrace one major subject and one or two minors. The minor subject or subjects shall represent approxi-

mately one-third of the course of study; except that such minor subjects may be waived on the recommendation of the department in which the major subject is taken and with the approval of the Committee on Graduate Study, when the breadth and extent of the candidate's training justify such a course,—in which case the candidate will be expected to show such breadth of training in his oral examinations.

In the nature of the case the work offered as minors cannot always be graduate work, but it should be advanced work and should, whenever possible, be planned as part of the course leading to the Ph. D. degree. If the work has been done before the student enters this University it shall be passed upon by the department in which it would have been done if taken here. This department is free to test the candidate as it sees fit.

5. The candidate must present a thesis of such a character as shall display power of original and independent investigation and constitute an actual contribution to knowledge. He must guarantee the printing of the thesis, in a form approved by the Committee on Graduate Study, within one year after the degree is conferred, and must deposit one hundred copies in the University Library.

6. The candidate must sustain final written examinations in major and minor subjects conducted by the department in which the study was taken and also shall submit to an oral test or examination by the special Examining Committee of the Faculty.

The special Examining Committee shall consist in each case of (1) the professor in charge of the major subject, (2) the one or more professors in charge of the minor subjects, (3) two members of the Committee on Graduate Study whose departments lie nearest to that of the major professor, and (4) the Chairman of the Committee on Graduate Study, acting as its secretary.

The High School Teacher's Certificate

County, and City and County Boards of Education are authorized to grant High School Certificates (under Sections 1521, 1775, and 1792 of the Political Code of California) to candidates recommended by the University as having fulfilled the requirements laid down by the State Board of Education, and provided the institutions concerned "shall each certify to the high character of the work accomplished under its direction, and to the personal fitness of the candidate."

The requirements laid down by the State Board of Education will be met by accomplishing the work outlined in either of the following groups:

Group I

1. Graduation from a college requiring not less than eight years of high school and college training.

2. One year of graduate study in a university belonging to the Association of American Universities, part of the time at least being devoted to one or more of the subjects taught in the high school.

3. Eight hours per week for one-half school year in the Department of Education, taken as a part of either the graduate or undergraduate course.

4. Practical teaching, equivalent to at least four hours per week for one-half school year, in a well-equipped school of secondary grade directed by the Department of Education of any of the universities belonging to the Association of American Universities, or in a school of grammar or secondary grade in connection with a California State Normal School, or under the direction of the Department of Education of the University of California, or of the Leland Stanford Junior University.

Group II

1. Graduation from a college requiring not less than eight years of high school and college training.

2. One-half year of graduate study in a university belonging to the Association of American Universities, part of the time at least being devoted to one or more of the subjects taught in the high school.

3. (*a*) Graduation from a California State Normal School or other normal school officially recognized by the State Board of Education as of equivalent grade; *or* (*b*) twenty months' experience with decided success as a regular teacher or as principal in any reputable school, elementary or secondary; *or* (*c*) six months as student teacher in a well-equipped school of secondary grade directed by a California State Normal School, or its recognized equivalent, or in a school of grammar or secondary grade in connection with a California State Normal, or under the direction of the Department of Education of the University of California, or of the Leland Stanford Junior University.

THE UNIVERSITY RECOMMENDATION

In addition to the technical requirements prescribed by the State Board of Education the University will require, as preliminary to any recommendation for the high school teacher's certificate, the completion of enough work (and of sufficiently high grade), in at least one subject, to secure a Department recommendation that the candidate is fitted to teach the subject in high school classes.

The Department requirements for such recommendation are, in most cases, stated in the Register under the Department headings; but each candidate *should find out definitely* from the Departments concerned, not later than the beginning of the Senior year, preferably earlier, the particular requirements which must be met.

It is advisable that every candidate for the teacher's recommendation should endeavor to fulfil the Department requirements in at least *two* high school subjects.

For information and advice as to possible and desirable combinations of subjects for high school positions, students are invited to consult the Secretary of the Committee on Recommendation of Teachers.

Recommendation of Teachers

The University undertakes (1) to keep a record of students and graduates who wish to teach, or to be transferred to other teaching positions, and (2) upon application of Boards of Education, School Trustees, or other officials, to recommend for suitable vacancies such candidates as seem most likely to succeed.

The University does not solicit positions for its graduates, and reserves the right to refuse to recommend candidates enrolled. Information received from University instructors and others regarding the fitness of candidates is regarded as confidential, and general letters of recommendation are not given.

Blanks for registration may be obtained of the Secretary, at the Registrar's office. They should be filled out each year, preferably during March or April.

The Grammar School Teacher's Certificate

Under Section 1775 of the Political Code of California, as amended March, 1909, County Boards of Education are authorized to grant, without examination, grammar school certificates "to holders of diplomas of graduation of the four-year course of the University of California or Leland Stanford Junior University when said holder of such diploma shall have had six months' training in one of the State Normal Schools of this State or has had eight months' successful experience in teaching in the public schools of California after graduation."

Under Section 1543 of the Political Code of California, as amended March, 1909, County Superintendents of Schools are authorized "to issue temporary elementary certificates valid for two years to graduates of the University of California and to graduates of the Leland Stanford Junior University"; but "no person shall be entitled to receive a temporary certificate more than once in the same county."

COURSES OF INSTRUCTION

Announcement for 1909–10

GREEK

Augustus Taber Murray, Professor.
Henry Winchester Rolfe, Associate Professor.
Edward William Hope, Instructor.

With the co-operation of Professor Fairclough and other members of the Department of Latin.

Undergraduate Courses

Instruction in the lower classes is given chiefly by means of recitations, but as the student advances these are supplemented by lectures.

It will be seen that provision is made for those who have had no Greek before coming to the University.

The Teacher's Recommendation.—Courses 2, 3, 4, and 17 constitute the minimum requirement for the high school teacher's recommendation in Greek.

1. Elementary.—Grammar; translation of easy prose; Greek composition. After the essential grammatical forms have been mastered, passages of continuous prose are taken up for translation, and, as soon as is practicable, the Anabasis. The student is made familiar with the ordinary forms of syntax, and exercises in writing Greek are regularly introduced. This course does not count as a part of the major work for students in Greek.

3 units, both semesters (Hope)

2. Xenophon and Plato.—Selections from Xenophon's Hellenica, with Plato's Apology and Crito. Open to those who have offered subject 22 on entrance, or who have completed course 1 in the University. M. W. F. 8:15. 3 units, 1st semester (Hope)

3. The Odyssey and Herodotus.—A continuation of course 2. Selections from the Odyssey and from Herodotus. M. W. F. 8:15.

3 units, 2d semester (Hope)

4. Prose Composition and Sight Translation.—Simple prose is taken up for sight-reading, and the exercises are based upon the text read. Required of Greek major students in connection with courses 2 and 3. T. Th. 8:15. 2 units, both semesters (Hope)

6. Geography.—The geography of the Greek world, and the geographical ideas of the Greeks. [Not given in 1909-10.]
1 unit, 2d semester (ROLFE)

7. Homer.—A critical study of the Iliad, with discussions and papers on Homeric topics. Prerequisites: courses 2 and 3, or an equivalent. Students taking course 7 are expected to attend the conferences on Homeric Civilization: see course 23b. M. W. F. 11:15.
3 units, 1st semester (ROLFE)

8. Euripides, Lucian, etc.—The Alcestis of Euripides, selections from Lucian, and selections from the Lyric Poets. A continuation of course 7. M. W. F. 11:15. 3 units, 2d semester (ROLFE)

10. History of Greece.—A general outline course. Not open to first-year students. M. W. F. 8:15.
2 units (three lectures), 1st semester (ROLFE)

12. Greek Art, Ritual, and Mythology.—With especial reference to Sculpture and Vase Painting. Lectures, with stereopticon. M. W. F. 8:15. 2 units (three lectures), 2d semester (ROLFE)

13. Private Life of the Greeks.—Lectures, illustrated by stereopticon. M. W. 1:30. [Not given in 1909-10.]
2 units, 2d semester (HOPE)

13b. The Economic Life of Greece.—A study of the economic basis of Greek civilization. Lectures and collateral reading.
2 units, 2d semester (HOPE)

14. Greek Tragedy.—The Prometheus of Aeschylus, the Antigone and Electra of Sophocles, and the Hippolytus and Iphigenia Taurica of Euripides. Other plays are assigned for private study, and lectures on the drama are from time to time given.
3 units; both semesters (FAIRCLOUGH, MURRAY)

15. Plato and Demosthenes.—The Phædo and the De Corona. M. W. F. 11:15. 3 units, 1st semester (MURRAY)

16. Thucydides.—Books VI and VII, the Sicilian Expedition. M. W. F. 11:15. 3 units, 2d semester (MURRAY)
[Courses 15 and 16, alternating with course 14, will not be given in 1909-10.]

17. Teachers' Course.—Lectures and practical exercises. T. Th. 11:15. 2 units, 1st semester (MURRAY)

18. Bucolic Poetry.—Selected Idylls of Theocritus, Bion, and Moschus and the Eclogues of Virgil are read and interpreted. [Stu-

dents completing this course will receive one unit credit in Greek and one in Latin.] 2 units, 1st semester (FAIRCLOUGH)

19. Greek Testament.—A study of the Gospel of Mark, with selections from the Epistles. T. Th. 10:15.
2 units, both semesters (MARTIN)

20. Lyric Poetry.—Selections from the Lyric poets, with accompanying lectures. [Not given in 1909-10.]
2 units, 2d semester (FAIRCLOUGH)

21. General Lectures.—A series of lectures on various phases of Greek and Roman civilization. Open to all students. Those who do prescribed reading may obtain two units instead of one. [Not given in 1909-10.] 1 unit (two lectures weekly), both semesters
(MURRAY, with the co-operation of other instructors)

22. Introductory.—An introduction to the study of the Greek language, based largely upon the Greek element in English, and leading to the rapid reading of Mark's Gospel. Open to all students.
3 units, 2d semester (MARTIN)

GRADUATE COURSES

The center of the Graduate work is the Greek Seminary—made up of the director and such students as satisfy him of their fitness for the work. The Seminary meets weekly for the critical interpretation of some Greek author, the different members, in turn, filling the post of interpreter. Topics for investigation are assigned, and papers prepared by the members are read and discussed.

Members of the Seminary are expected to supplement their critical work by wide reading, and lectures on the author or authors under discussion are given by the director. It is in the highest degree desirable that all members of the Seminary should be able to read both French and German.

23. The Greek Seminary. In 1909-10 the Seminary will be occupied with the study of Homer. Portions of the Iliad will be taken up for critical study, and lectures on the structure of the poem and the history of the text will be given by the director. (Students should provide themselves in advance with the editions of the Iliad by Leaf (2d ed.) and by Ameis-Hentze, and with Monro's Homeric Grammar.) W. 2:30-4:30. 4 to 6 units, both semesters (MURRAY)

23b. Conferences on Homeric Civilization. The various instructors in the department of Greek will meet weekly with advanced students for the discussion of problems pertaining to Homeric civiliza-

tion and the early age of Greece. Students registered for course 7 should attend these conferences. 2 units, both semesters
(MURRAY, assisted by other instructors)

24. Rapid Reading.—Graduate and advanced students will meet weekly for the rapid reading of the Iliad and the Odyssey. M. 2:30-4:30. 2 units, both semesters (MURRAY)

SPECIAL LECTURES

Throughout the year Professor Murray gives lectures, thrice weekly, on Greek Epic and Dramatic Poetry. These lectures are intended for general literary students, and do not presuppose a knowledge of Greek; they do not count as part of the major work for students in Greek. The courses are not open to first-year students.

26. The Greek Epic.—M. W. F. 10:15.
2 units (three lectures), 1st semester (MURRAY)

27. Greek Tragedy.—M. W. F. 10:15.
2 units (three lectures), 2d semester (MURRAY)

LATIN

HENRY RUSHTON FAIRCLOUGH, Professor.
JEFFERSON ELMORE, BENJAMIN OLIVER FOSTER, ERNEST WHITNEY MARTIN, Assistant Professors.
ESTHER JEAN SPENCER, Assistant.

With the co-operation of the instructors in the Department of Greek.

UNDERGRADUATE COURSES

The aim of the undergraduate courses in Latin is to give the student a somewhat systematic knowledge of the language and its development, an acquaintance with the representative authors of Latin literature, and some insight into the life, culture, and civilization of ancient Rome.

The Department recognizes two classes of major students: (1) those who wish to pursue a course of liberal studies, including Latin as a prominent feature; (2) those who, expecting to teach Latin, desire to be properly equipped for that purpose.

Students who wish to qualify for teaching Latin must take courses 2, 4, 5, 6, 7, 8, 9, and 17, together with such other courses as are recommended by the Department. To other students more freedom of choice is allowed.

1. Virgil and Cicero.—Virgil, selected books of the Æneid; Cicero, selected orations. This course is planned for those who have passed in entrance subject 21*a*. M. W. F. 9:15.

3 units, both semesters (SPENCER)

2. Terence, Cicero, and Horace.—Terence, Andria; Cicero, De Senectute; Horace, Odes and Epodes; selections from Catullus. Open to students who have completed course 1, or who have offered entrance subject 21*b*. Three sections. M. W. F. (I) 8:15, (II) 9:15, (III) 10:15.

3 units, both semesters (FAIRCLOUGH, ELMORE, FOSTER, MARTIN)

3. Terence, Cicero, and Selections.—Terence, Andria; Cicero, De Senectute; selections from legal writers. Intended for non-majors who cannot devote more than four unit-hours to Latin. Not open to Latin majors. T. Th. 10:15.

2 units, both semesters (FAIRCLOUGH, MARTIN)

4. Prose Composition I.—Open to those taking course 2. One hour each week will be devoted to class-room work in composition; for the other hour the class will be divided into small groups which will meet with an instructor for practical exercises and rapid reading of easy prose. T. Th. 9:15.

2 units, both semesters (FOSTER, ELMORE, MARTIN)

5. Horace.—Satires and Epistles. Open to those who have completed course 2 or 3. Attention is directed especially to the style and subject matter, to Horace's influence upon later literature, and to the salient features of the Augustan age. M. W. F. 10:15.

3 units, 1st semester (ELMORE)

6. Livy and Tacitus.—Selections from Livy's History and the Annals of Tacitus. This course, complementary to course 5, involves a survey of Roman history and the literature of the early empire. M. W. F. 10:15. 3 units, 2d semester (ELMORE)

7. Prose Composition II.—Open to students who have taken course 4. T. Th. 9:15. 2 units, both semesters (ELMORE)

8. Roman Comedy.—The Trinummus of Plautus and the Phormio of Terence. Attention is paid to the early forms, constructions, and metres, and to the staging of a Roman play, with some consideration of the differences in style and dramatic art between the two playwrights. T. Th. 10:15. 2 units, 1st semester (FOSTER)

9. The Letters of Cicero.—Selections from the correspondence are made with a view to obtaining a conception of Cicero's character

as a man and to becoming acquainted, as far as possible, with the social and political conditions of the time. T. Th. 10:15.
2 units, 2d semester (ELMORE)

10. Pliny and Seneca.—Selections from the works of the younger Pliny and Seneca. T. Th. 8:15. 2 units, 1st semester (MARTIN)

11. Roman Elegy.—Selections from Catullus, Tibullus and Propertius. 2 units, 2d semester (FOSTER)

12. Lucretius.—Selections from the De Rerum Natura are read with particular attention to the philosophic thought and its poetic treatment. [Not given in 1909-10.]
2 units, 2d semester (FAIRCLOUGH)

13. Prose Composition III.—A course for advanced students.
1 unit, both semesters (FAIRCLOUGH)

14. Juvenal and Martial.—Selections from the Satires of Juvenal and the Epigrams of Martial, with supplementary reading in other writers of the first century. T. Th. 8:15.
2 units, 1st semester (ELMORE)

15. Quintilian.—Book X. Rhetoric and literary criticism among the Romans. T. Th. 9:15. 2 units, 1st semester (ROLFE)

16. Roman Literature.—Illustrative selections from various writers will be read by the class. T. Th. 9:15.
2 units, 2d semester (ROLFE)

17. Teachers' Course.—Lectures on methods of teaching Latin, with practical exercises. Open only to advanced students. M. 2:30-4:30.
2 units, 2d semester (FAIRCLOUGH)

18. Cicero's Philosophical Works.—Lectures upon the life and career of Cicero with especial reference to his work in philosophy. Selections from the De Natura Deorum, Tusculan Disputations, and other philosophical works will be read. T. Th. 8:15.
2 units, 2d semester (MARTIN)

19. Roman History from the Sources.—Cæsar's Civil War.
2 units, 1st semester (FOSTER)

20. The Roman Novel.—The Cena Trimalchionis of Petronius, and selections from Apuleius. 2 units, 2d semester (FOSTER)

21. Introductory.—Grammar and translation of easy prose. This course is intended only for mature and earnest students who have had no school training in Latin. Those who have had some slight previous training may be admitted the second semester.
5 units, both semesters (MARTIN)

Graduate Courses

These courses are open to graduates in Latin who have had at least two years' undergraduate work in Greek. The ability to read French and German is also very desirable, and, in the case of candidates for the degree of Ph. D., necessary. The aim of the courses is to give the student a thorough grasp and detailed knowledge of particular authors, and of certain periods and fields of literary activity, as well as a training in literary criticism, and an acquaintance with the methods of original research.

22. Latin Seminary.—In 1909 10 the Seminary will be devoted to Epigraphy, with studies in the Corpus Inscriptionum. F. 2:30-4:30. 2 units, both semesters (Fairclough)

23. The Roman Epigrammatists.—A special study will be made of the Epigrams of Martial with a view to determining the phases of life in which he was most interested. Lectures; readings of the text; reports on special topics. 2 units, both semesters (Elmore)

24. Introduction to Latin Palæography.—Lectures and practice in reading facsimiles of manuscripts. [Not given in 1909-10.] (Fairclough)

25. Introduction to Latin Epigraphy. Lectures in connection with course 22. 1 unit, both semesters (Fairclough)

26. Oscan and Umbrian.—The study of the grammar will be accompanied by a reading of the more important inscriptions. 2 units, 1st semester (Foster)

27. History of Classical Studies.—Lectures. [Not given in 1909-10.] 1 unit, 2d semester (Elmore)

Special Courses

29. History of Rome. A general course, open to all students. 3 units, 2d semester (Elmore)

31. Roman Art and Monuments. A survey of the topography, architecture, sculpture, and other art-forms of ancient Rome and the provinces, illustrated with lantern slides. This course, illustrative of Roman history and literature, is intended mainly for major students in Latin. Others must receive special permission from the instructor before registering. T. Th. 11:15. 2 units, 2d semester (Fairclough)

32. Roman Private Life.—Lectures, with illustrations from ancient art and other sources. Open to all, but of special importance to Latin students. 2 units, 1st semester (Martin)

33. Roman Political Institutions.—Lectures and assigned reading on the development and operation of the most important features of the Roman government. Open to all students. [Not given in 1909-10.]
2 units, 2d semester (ELMORE)

GERMANIC LANGUAGES

GEORGE HEMPL, JAMES OWEN GRIFFIN, Professors.
KARL G. RENDTORFF, WILLIAM ALPHA COOPER, Associate Professors.
MACY MILLMORE SKINNER, Assistant Professor.
GEORGE HENRY DANTON, Acting Assistant Professor.
BRUNO BOEZINGER, HERMANN HILMER, Instructors.

The advanced courses are intended primarily for those students who are candidates for the degrees of Master of Arts and Doctor of Philosophy; but special consideration is also given to the needs of those who intend to make the teaching of German their profession. Graduate work in the Germanic languages is facilitated by the opportunities offered by the library of the late Professor Hildebrand of Leipzig, which contains a rich and well-chosen collection of works on German philology and literature.

The attention of all students of German is called to the course in the history of Germany, given as course 12 in the Department of History. This course should be taken as early as possible.

Students who intend to teach German are expected to take at least courses 3, 6, 7, 8, 13*b*, 14, 22, and either 9, 10, or 11. See also the notes to courses 2 and 13, and the note above course 9.

1. Elementary.—It is the object of this course to put the learner in possession of the elements of the German language. This implies: (1) a personal command of simple German, that is, the ability to understand such German whether heard or read, and to employ the language in simple conversation, narration, and description, both orally and in writing; (2) such a ready familiarity with the elements of German grammar as is essential for the attainment of this command of the language. Daily (I) 8:15, (II) 9:15, (III) 10:15, (IV) 11:15.
5 units, both semesters (COOPER, SKINNER, DANTON, HILMER)

2. Second-year German. (See note below.)

a. Reading.—Texts suitable for the second year; for the most part, the writings of contemporary authors. M. W. F. (I) 8:15, (II) 9:15, (III) 10:15, (IV) 11:15. 3 units, both semesters
(HEMPL, GRIFFIN, SKINNER, BOEZINGER)

b. Reproduction and Production, oral and written.—The work of this course is intended to assist the pupil in getting a personal command of German, both spoken and written; with it is correlated a thorough review of the elements of the grammar. T. Th. (I) 8:15, (II) 9:15, (III) 10:15, M. F. (IV) 11:15. 2 units, both semesters

(Griffin, Cooper, Danton, Boezinger)

Note.—Students expecting to continue the study of German beyond the second year are supposed to have completed both 2*a* and 2*b* or an equivalent.

3. Classical German Drama.—This course aims chiefly to be an introduction to the spirit of the classical German drama; but throughout the course an effort is also made to familiarize the student, by means of various selected readings, with the life and character of the German people. M. W. F. (I) 8:15, (II) 10:15.

3 units, both semesters (Griffin, Rendtorff)

4. Modern German Drama.—Lectures in connection with the interpretation and rapid reading of some of the more important works of the modern dramatists. T. Th. 8:15.

2 units, both semesters (Griffin)

5. Modern German Novels.—The reading of standard modern novels, with lectures on the development of the novel. T. Th. 9:15.

2 units, both semesters (Skinner)

6. Advanced German Grammar.—A systematic presentation of the important facts of German grammar, together with individual investigations of the usage of various writers. T. Th. 1:30.

2 units, both semesters (Hempl)

7. German Composition.—By composition is meant, not translation from English, but practice in putting one's thoughts into acceptable written German. (I) M. W. 9:15, (II) T. Th. 9:15, (III) T. Th. 11:15. 2 units, both semesters. (Boezinger, Hilmer)

8. Advanced Composition.—M. W. 8:15.

2 units, both semesters (Boezinger)

Note.—Students wishing to take up any of the three following courses (9, 10, 11) will be expected to have such preparation as can be obtained by pursuing courses 3 and either 4 or 5.

9. Lessing.—Lectures on Lessing's life and times, with reading and discussion of his principal works. M. W. F. 11:15.

3 units, both semesters (Danton)

10. Schiller.—Lectures on his life, together with interpretation and discussion of his writings. M. W. F. 10:15.
3 units, both semesters (SKINNER)

11. Goethe.

a. Lectures on Goethe's life and works, and reading of selected poems. [Not given in 1909-10.]
3 units, both semesters (COOPER)

b. Faust, Part First and Part Second. T. Th. 10:15.
3 units, both semesters (COOPER)

13. The History of German Literature.—Lectures and readings.

a. From the earliest times to the eighteenth century. [Not given in 1909-10.] 2 units, both semesters (RENDTORFF)

b. The eighteenth and nineteenth centuries. T. Th. 8:15.
2 units, both semesters (RENDTORFF)

Note.—Students electing course 13 are expected to have pursued a general course in the history of English literature and to be able to read German with facility.

14. Teachers' Course.—Lectures on the various methods employed in teaching modern languages, together with practical advice in the matter of conducting classes. T. 2:30-4:30.
2 units, 2d semester (HEMPL)

15. The Genesis of Grammar.—Lectures on the origin and development of the parts of speech and of other grammatical apparatus. T. 2:30-4:30. 2 units, 1st semester (HEMPL)

16. Middle-High German.—Grammar and selected texts (first semester); Walter von der Vogelweide (second semester). M. W. 9:15.
2 units, both semesters (RENDTORFF)

17. Old-High German.—[Not given in 1909-10.]
2 units, both semesters (HEMPL)

18. Old Norse.—[Not given in 1909-10.]
2 units, both semesters (HEMPL)

19. Gothic.—F. 2:30-4:30.
2 units, both semesters (HEMPL)

20. The Runes.—Lectures on the origin and development of the primitive Germanic alphabet. [Not given in 1909-10.]
2 units, 1st semester (HEMPL)

21. The History of German Civilization.—This course is intended for students of German who wish to become acquainted with the de-

velopment of German civilization in its relation to German literature. T. Th. 10:15. 2 units, both semesters (RENDTORFF)

22. The History of Germany.—[See course 12 in the Department of History, and the note at the beginning of this section, page 12.]

23. Thesis Course.—Special investigations and reports intended to furnish training in preparation for original research work. Under the direction of the various members of the staff. Credit subject to individual adjustment.

ROMANIC LANGUAGES

JOHN ERNST MATZKE, Professor.
OLIVER MARTIN JOHNSTON, Associate Professor.
COLBERT SEARLES, CLIFFORD GILMORE ALLEN, ALBERT LÉON GUÉRARD, Assistant Professors.
ERNEST GEORGE ATKIN, HENRY BLUESTONE, Acting Instructors.

The undergraduate courses in the Romanic Languages are planned so as to give students an intimate acquaintance with the modern forms of the languages spoken in the principal neo-latin countries. To this end systematic attention is paid to pronunciation, reading, syntax, and conversation. In the higher courses special emphasis is laid on the study of literature. In order to give students an opportunity to become familiar with the spoken idioms, several of the advanced courses are conducted as much as possible in the language which forms the object of study.

The Department recognizes two classes of major students: (1) students who expect to teach French or Spanish and who wish to take up the study from the point of view of the specialist; (2) students who desire to group a course of study of a general nature around that of French or Spanish.

Either French or Spanish may be selected as a major subject. In French the minimum requirement consists of courses 2, 3a, 4, 5, 6, 7, 8, 9, 10, and 11. In Spanish the same requirement includes courses 12, 13, 14, 15, 16, 17, and 18.

In addition major students who intend to teach either French or Spanish will be expected to take Latin 1, 2, and 4, German 1 and 2, and Elementary French or Spanish or Italian.

The Teacher's Recommendation.—The minimum requirement for the High School recommendation is as follows: in French—courses 2, 3a, 4, 6, 7, and 8; in Spanish—courses 12, 13, 14, 15, 16, 17. The Department will insist also on courses 22 and 23. Recommendations will be given

only on the vote of the Department, and will demand a degree of scholarship above the ordinary passing mark.

1a. Elementary French.—Fraser and Squair, French Grammar, with written and oral exercises and systematic training in French pronunciation on the basis of Matzke's Primer of French Pronunciation; Aldrich and Foster's French Reader. M. W. F. (I) 9:15, (II) 10:15, (III) 11:15.

3 units, both semesters (ALLEN, ATKIN, BLUESTONE)

1b. Elementary French, Reading Course.—The course is intended for students who merely desire to obtain a reading knowledge of the language, and does not prepare for the more advanced courses in the Department. Aldrich and Foster, Foundations of French; Aldrich and Foster's French Reader; Mérimée, Colomba. M. W. F. 8:15.

3 units, both semesters (SEARLES)

[Courses 1*a* and 1*b* are continuous courses, open to all, but students desiring to enter after the end of the second week will be admitted only upon special examination.]

2. Modern French Syntax.—François, Advanced French Prose Composition. Open to students who have completed course 1*a*, or who have received credit for entrance subject 19*a*. (I) T. Th. 10:15, (II) T. Th. 1:30. 2 units, both semesters (JOHNSTON, SEARLES)

3. Modern French Reading.—Translation of selected texts in prose and verse. Three sections will be conducted as follows:

a. Required of major students and open only to others taking course 2 or having completed it. Prerequisite course 1*a* or entrance subject 19*a*. M. F. 11:15.

b. General reading section open to students who have completed courses 1*a* or 1*b*, or who have received credit for entrance subject 19*a*. T. Th. (I) 8:15, (II) 11:15.

c. French Historical Reading. Jullian, Extraits des Historiens Français du XIXe siècle; Seignobos, Extraits historiques de Michelet; Taine, Introduction à l'Histoire de la litterature anglaise. Open on the same conditions as section *b*. T. Th. 9:15

2 units, both semesters (JOHNSTON, SEARLES, GUÉRARD)

4a. French Conversation.—There will be three meetings of the class during the week, for which one unit of credit will be given toward graduation. Open to students who have completed course 1, or who have received credit for entrance subject 19*a*. M. W. F. 10:15.

1 unit, both semesters (GUÉRARD)

4b. French Pronunciation.—Practice in French pronunciation with the phonograph, required for one semester of all students registering for course 4*a*, unless excused by the instructor, and open to others likely to profit by such practice as far as the limitations of time and space will permit. There will be one class exercise and two practice hours each week. T. Th. 2:30.

1 unit, either semester (SEARLES)

[Courses 2, 3, and 4 constitute the second year's work in French, and should, if possible, be taken during the same year. Course 4 may not precede course 2.]

5. Reading and Writing of French.—An intermediate course in reading and composition intended primarily for students entering with entrance subjects 19*b* or 19*c*. M. W. F. 11:15.

3 units, both semesters (GUÉRARD)

6. Advanced French Prose Composition.—Translation into French of selected English prose. Open to students who have completed course 2 or course 5. T. Th. 10:15.

2 units, both semesters (GUÉRARD)

7. Outline Course in the History of French Literature.—Lectures, supplemented by reading and reports by the members of the class. Not open to Freshmen. Prerequisite: course 3 or course 5. M. W. F. 10:15.

3 units, both semesters (SEARLES)

8. Classical French.—A study of the principal authors of the classical period. Representative texts will be read from the works of Corneille, Racine, Molière, Voltaire, Le Sage, La Fontaine, and Boileau. Not open to Freshmen. Prerequisites: courses 2 and 3*a*, or course 5, or their equivalent. M. W. F. 9:15.

3 units, both semesters (JOHNSTON)

9. History of French Literature in the Nineteenth Century.—Lectures, with reading of the principal authors and reports by the members of the class. Open to students who have completed courses 7 or 8. T. Th. 11:15. 2 units, both semesters. (MATZKE)

[With permission Juniors and Seniors in other departments may register for one unit of credit in course 9 and be excused from the supplementary reading.]

10. French Lyric Poetry in the Nineteenth Century.—Fonsny and Van Dooren, Poètes Lyriques Français. The course will be conducted in French. Open to advanced students who have had the equivalent of course 4. M. F. 9:15.

2 units, 1st semester (GUÉRARD)

11. Augier.—A study of the theatre of Augier and French society from 1840-1880. The course will be conducted in French. Open to advanced students who have had the equivalent of course 4. M. F. 9:15. 2 units, 2d semester (GUÉRARD)

12. Elementary Spanish.—Giese, A First Spanish Book and Reader; Matzke, First Spanish Readings. A continuous course open to all. M. W. F. (I) 8:15, (II) 9:15, (III) 10:15.
3 units, both semesters (ALLEN, ATKIN, ———)

13. Modern Spanish Syntax.—Ramsey, A Text-book of Modern Spanish; Umphrey, Spanish Prose Composition. Open to students who have completed course 12, or who have received credit for entrance subject 18*a*. M. W. 11:15. 2 units, both semesters (ALLEN)

14. Modern Spanish Reading.—Translation of selected texts in prose and verse. Open to students who have completed course 12 or who have received credit for entrance subject 18*a*. M. W. 11:15.
2 units, both semesters (ATKIN, BLUESTONE)

15a. Spanish Conversation.—There will be three meetings of the class during the week, for which one unit of credit will be given toward graduation. Open to students who have completed course 12, or its equivalent. [Not to be given in 1909-10.]
1 unit, both semesters

15b. Spanish Pronunciation.—Practice in Spanish Pronunciation with the phonograph is open to students likely to profit by such practice as far as the limitations of time and space will permit.
1 unit, either semester

[Courses 13, 14, and 15 constitute the second year's work in Spanish, and should, if possible, be taken during the same year. Course 15 may not precede course 13.]

16. Advanced Spanish Composition.—Translation into Spanish of selected English prose. Open to students who have completed course 13, or its equivalent. T. Th. 2:30. 2 units, both semesters (ALLEN)

17. Classical Spanish.—A study of the principal authors of the classical period. Representative texts will be read of Cervantes, Lope de Vega, Calderón, Alarcón, Tirso de Molina as well as selections from Ford's A Spanish Anthology. Open to students who have completed courses 13 and 14 or their equivalent. [Not to be given in 1909-10.]
2 units, both semesters

18. Outline course in the History of Spanish Literature.—Lectures with reading of important works and reports by the members

of the class. Open to students who have completed course 17 or its equivalent. T. Th. 1:30. 2 units, both semesters (ALLEN)

19. **Elementary Italian.**—Gaffino, A New Grammar of the Italian Language; Bowen, First Italian Readings; Manzoni, I Promessi Sposi. Open to all. M. W. F. 10:15.
3 units, both semesters (JOHNSTON)

20. **Advanced Italian.**—Dante, La Divina Commedia. Translation course open to students who have completed course 19. [Not to be given in 1909-10.] 2 units, both semesters (JOHNSTON)

21. **Dante and the Divine Comedy.**—Lectures open to Juniors and Seniors in all departments. T. Th. 8:15.
2 units, 2d semester (JOHNSTON)
[Course 20 alternates with course 21.]

22. **Phonetics.**—Lectures on the organs and the nature and formation of speech sounds with special reference to the pronunciation of French. Intended particularly for teachers of language. Open only to advanced students. M. T. W. 1:30.
2 units, 1st semester (MATZKE)

23. **Teachers' Course in French.** Lectures on methods of teaching French, study of the available text-books, and review of French grammar. Open only to advanced students. M. W. 1:30.
1 unit, 2d semester (MATZKE)
[Courses 22 and 23 are given in alternate years; they will be given in 1909-10.]

24. **Boileau.**—A study of Boileau's works and his theories of literary criticism. M. T. W. 2:30.
3 units, 1st semester (MATZKE)

25. **Racine.** A study of Racine and his theatre. M. T. W. 2:30.
3 units, 2d semester (MATZKE)

26. **The Roman d'Aventure.** A detailed study of several of the characteristic chivalrous romances of the XII and XIII centuries. M. 11:15, Th. 1:30. 2 units, both semesters (MATZKE)

27. **Journal Club.** The instructors in the department and the advanced students meet regularly on alternate Fridays for the discussion of the periodical and new books. F. 1:30.

ENGLISH LITERATURE AND RHETORIC

Melville Best Anderson, Alphonso Gerald Newcomer, Professors.
Raymond Macdonald Alden, Associate Professor.
Samuel Swayze Seward, Jr., Howard Judson Hall, Lee Emerson Bassett, Henry David Gray, William Dinsmore Briggs, Assistant Professors.
John Kester Bonnell, Theresa Peet Russell, Instructors.

Requirements for the Degree of Bachelor of Arts

a. The courses in Chaucer, Shakspere, Milton (or Spenser or Wordsworth), History of English Literature (course 30 in the second year, 32 in the third year, and 31 in the fourth year), besides such preliminary courses in vocal training, composition, or literature as may be requisite in each individual case.

b. English History. Students entering credited with Entrance Subject 16 are considered as having fulfilled this requirement.

c. A sound knowledge of at least one foreign language and its literature—ordinarily interpreted as requiring a minimum of 16 units in the chosen language, not including Latin 1, German 1, or French 1.

In general, students are encouraged to include among their elected studies Latin or Greek (not less than two years; or, in case Latin or Greek be selected to meet requirement *c* above, one modern foreign language), Anglo-Saxon, and a course in science, with laboratory work. Students preparing for journalism may substitute for the more advanced courses in literature, courses in Advanced Composition, History, Economics, and Social Science.

The Teacher's Recommendation.—Recommendation for the Teacher's Certificate in English is granted only by vote of the department on the basis of approved scholarship, and upon the completion of a certain amount of prescribed work. The undergraduate courses to be usually prescribed are, in the Department of English Literature, Vocal Expression, Composition, Prosody, Shakspere, Milton, Teachers' Course, and one course in the history of literature, and, in the Department of English Philology, Anglo-Saxon and Chaucer. In addition, at least one graduate course in each department, extending over a year, will be expected. When convenient, this study may be entered upon the second semester of the senior year.

Preliminary and General Courses

(Open to all students unless otherwise specified.)

A. Elementary Composition.—A one-semester course required of

all first-year undergraduates except those who show themselves entitled to exemption. T. Th. (I) 8:15, (II) 9:15, (III) 10:15, (IV) 11:15.
1 unit, either semester (Hall, Bonnell, ———)

1. Principles of Vocal Expression.—A general course in vocal training, the use of the voice in reading and speaking, and the elements of interpretative reading, with practice in the preparation and delivery of short speeches. M. W. F. (I) 9:15, (II) 10:15, (III) 11:15.
3 units, one or both semesters (Bassett, Bonnell)

2. English Composition.—Practical work in narration and description, first semester; practical work in exposition, second semester. T. Th. (I) 8:15, (II) 9:15, (III) 10:15, (IV) 11:15.
2 units, both semesters (Gray, Briggs, Russell)

2a. English Composition.—The first part of course 2, offered as a one-semester course. T. Th. (I) 9:15, (II) 10:15.
2 units, either semester (Newcomer, Seward)

2b. English Composition.—The second part of course 2, offered as a one-semester course. T. Th. (I) 9:15, (II) 10:15.
2 units, either semester (Newcomer, Seward)

3. Note Taking.—Practice in the taking of notes, both from lectures and reading, and in the preparation of abstracts and summaries. Th. 8:15. 1 unit, either semester (Seward)

4. Modern English.—The spoken language. Lectures on the relation of English to other tongues, the history and character of its vocabulary, standards of pronunciation, etc. T. 8:15.
1 unit, 2d semester (Newcomer)

5. English Classics.—The chief living books of English literature from Le Morte Darthur to the Idylls of the King. Lectures and readings, with outlined reading for the class. Not open to English majors. M. W. F. 9:15. 3 units, both semesters (Newcomer, Russell)

6. Introduction to Poetry. A study of the nature, methods, and varieties of poetry, the elements of poetic form, and the elements of poetic criticism. M. W. F. 10:15. 3 units, 2d semester. (Alden)

6a. Tennyson.—A study of selected portions of Tennyson's poems, illustrating the growth of his literary art. A general course, designed for first-year students, and open to third-year and fourth-year students only by permission. M. W. F. 10:15.
3 units, 1st semester (Hall, Bassett)

9. The English Bible.—Representative books of the Bible studied as literature, with (1) some general account of the Bible in its en-

tirety, (2) a grouping of the various books according to their form, and (3) a study of certain extended passages in each one of these forms, especially of those which have had the widest influence on English literature. [Not given in 1909-10.]

3 units, 2d semester (GRAY)

10. Shakspere.—A study of a number of plays selected to illustrate both the scope of Shakspere's genius and the development of his art. Designed primarily for English major students. Not open to first-year students. T. Th. 9:15.

2 units, both semesters (SEWARD, NEWCOMER)

10a. Shakspere.—A one-semester course, similar to course 10. Not open to English majors, nor to first-year students. M. W. F. 10:15 (first semester), 11:15 (second semester).

3 units, either semester (GRAY, ALDEN)

ADVANCED AND SPECIAL COURSES

I. Vocal Expression

(Course 1 prerequisite.)

14. Vocal Interpretation.—*a.* Lyric poetry (first semester). Practice in the oral rendering of selections from the English poets of the nineteenth century. Designed particularly for students who intend to teach English literature.

b. Dramatic Literature (second semester). A careful analysis of two or three plays of Shakspere. Members of the class will vocally interpret characters and scenes assigned for individual study. T. Th. 10:15. 2 units, both semesters. (BASSETT)

15. Public Speaking.—Practice in the preparation and delivery of speeches, with attention to the style of spoken discourse based on a study of masterpieces of oratory. Prerequisites: courses 1 and 2. T. 1:30-3:30; Th. 2:30-4:30.

2 units, both semesters (BASSETT, BONNELL)

II. Written and Oral Expression

(Course 2 prerequisite.)

21. Advanced Composition.—Including both rapid writing and the preparation of long themes. T. Th. (I) 9:15, (II) 10:15.

2 units, both semesters (HALL, RUSSELL)

22. Narration.—The principles of invention and style in their practical application to narrative art. Open by permission to specially qualified students. T. 1:30.

1 unit, both semesters (SEWARD, ALDEN)

24. Argument.—Practice in the preparation and presentation of material in expository and argumentative form, with some study of models. Open to a limited number of students. T. Th. (I, II) 11:15.
3 units, 1st semester (ALDEN, BRIGGS)

25. Oral Debate.—Practice in the preparation and delivery of oral arguments, chiefly on current public questions. Open to a limited number of students who have taken, or are taking, course 24, to be admitted in the order of application. W. 2:30-4:30.
2 units, both semesters (ALDEN, BASSETT)

28. Teachers' Course in English.—A study of the methods of teaching Composition (first semester) and Literature (second semester) in secondary schools. Open to students in senior year. W. 1:30-3:30.
2 units, both semesters (SEWARD)

III. History and Interpretation of Literature

30. Survey of English Literature. Lectures, supplementing an outline study of the history of English literature. T. Th. 2:30.
2 units, 2d semester (ALDEN)

31. History of Early English Literature.—From the beginning to 1557 (English Philology 3). Open to fourth-year students. M. W. F. 8:15.
3 units, 1st semester (FLÜGEL)

32. Eighteenth Century Literature. *a.* From 1660 to 1740, the age of Dryden and the age of Pope (first semester). *b.* From 1740 to 1798, the age of Johnson and the early Romantic Revival (second semester). Open to third-year students. M. W. F. 11:15.
3 units, both semesters (ALDEN, HALL)

33. Early Nineteenth Century Literature: 1798-1832.—The age of Coleridge, Byron, Scott, and the Reviewers. Open to students of all departments in third and fourth years. [Not given in 1909-10]
2 units, 1st semester (ALDEN)

34. Victorian Literature. *a.* A survey of Victorian prose, with special emphasis upon Carlyle, Ruskin, and Arnold (first semester). *b.* A study of selected Victorian poets (second semester). Designed as a full-year course, but may be taken for one semester only.
2 units, both semesters (SEWARD)

35. English Fiction. A course in the history of English fiction, with emphasis on the rise and development of the novel in the eighteenth and nineteenth centuries. Open to third-year and fourth-year students. T. Th. 10:15.
2 units, both semesters (BRIGGS)

36. **Satire.**—An advanced course, open to those who have had English 7, and to others by permission. Time to be arranged.
1 unit, both semesters (Russell)

37. **English Drama.**—English dramatic literature from its origin to the nineteenth century, omitting Shakspere. Open to students of all departments in third and fourth years. [Not given in 1909-10.]
2 units, both semesters (Seward)

38. **The Modern Drama.**—A study of certain significant dramas of Ibsen, and of contemporary dramatists, considered largely from a structural point of view. Open to students of all departments in their third and fourth years. M. W. F. 10:15.
3 units, 2d semester (Gray)

39. **Prosody.**—A study of the principles and history of English versification. Open to English students in the third and fourth years. [Not given in 1909-10.] 2 units, 2d semester (Alden)

41. **Spenser.**—The Faerie Queene in its relation to the epics of chivalry. M. W. F. 8:15. 3 units, 2d semester (Briggs)

42. **Milton: Paradise Lost.**—Open to students of English in the third and fourth years; to students of other departments in the fourth year. [Not given in 1909-10.] 3 units, 1st semester (Newcomer)

43. **Wordsworth, Byron, and Shelley.**—Lectures and interpretations. Open to third-year and fourth-year students. M. W. F. 10:15.
3 units, 1st semester (Newcomer)

44. **Browning.**—A general survey of his poetical works in lectures and readings. Open to students of all departments in the third and fourth years. T. Th. 9:15. 2 units, both semesters (Anderson)

Graduate Courses

The preliminary requirements for entrance upon a course for an advanced degree in English are:

a. The course for the degree of A. B. in English or its equivalent.

b. An elementary knowledge of Anglo-Saxon.

c. A sound knowledge of two foreign languages (preferably one ancient and one modern language).

52. **Theory of Poetry.**—A study of the principal problems connected with the definition, classification, and criticism of poetry, and of the history of their critical treatment, with special reference to English literature. [Not given in 1909-10.]
2 units, both semesters (Alden)

53. English Lyric.—Studies in the lyric as a poetic form, and its development in England to the seventeenth century. T. 2:30-4:30.
2 units, 1st semester (Alden)

54. Comparative Literature.—The romantic movements in English, French, German, and Italian literature, from the French Revolution to 1850. M. 3-5. 3 units, both semesters (Anderson)

55. Shakspere.—A critical study of Antony and Cleopatra, on the basis of the Variorum edition of Dr. Furness, and a more cursory examination of the two other Roman plays. T. 3-5.
3 units, 2d semester (Anderson)

ENGLISH PHILOLOGY

Ewald Flügel, Professor.
William Dinsmore Briggs, Assistant Professor (Department of English Literature).

1. Anglo-Saxon.—Anglo-Saxon Grammar and translation of select passages in prose. M. W. F. 11:15.
3 units, 1st semester (Briggs)

2. Chaucer.—This course is an elementary one, and includes an outline of Middle English Grammar for the beginner. T. Th. 8:15.
2 units, 1st semester (Flügel)

3. History of Early English Literature (to 1557).—[See English Literature 31*a*.] M. W. F. 8:15.
3 units, 1st semester (Flügel)

Advanced and Graduate Courses

In order to prepare the future high school teachers satisfactorily, candidates for the Teachers' Recommendation in English are expected to take besides the work in Literature, a whole year's advanced work in English Philology. If properly prepared they will be admitted to the Seminary and other advanced courses during the second semester of their senior year. Candidates for the Master's Degree are expected to do a year's post-graduate work in English Philology, for which a reading knowledge of German, French (old and modern), and Latin is a prerequisite.

4. Middle English Exercises.—Hours and conditions to be arranged. (Flügel)

5. Beowulf.—[Not to be given in 1909-10.]
2 units, 2d semester (Briggs)

6. English Paleography.—[Not to be given in 1909-10.]

7. Middle English Grammar. M. 1:30.
2 units, 1st semester (FLÜGEL)

8. Chaucer (advanced course).—Interpretation of the Prologue, and lectures on the history of Chaucer Criticism. Prerequisite: Course 2 or its equivalent. T. Th. 8:15.
2 units, 2d semester (FLÜGEL)

9. Ballads and Lyrics of the 16th Century.—M. 2:30-4-30.
2 units, 2d semester (FLÜGEL)

10. History of English Philology.—Lectures. [Not to be given in 1909-10.] 2 units, 2d semester (FLÜGEL)

11. Seminary: Research Work.—Papers and Lectures. Th. 2:30.
2 units, both semesters (FLÜGEL)

SEMITIC LANGUAGES

HERSCH RAM, Ph. D.

The following courses will probably be offered in case they are desired by a sufficient number of students. The hours named may be changed to accommodate the requirements of students.

1. Elementary Hebrew.—Davidson's Hebrew Grammar, with exercises followed by easy readings from the Hebrew Scriptures. M. F. 2:30-4. 3 units, both semesters (RAM)

2. Second Course Hebrew.—Selected Hebrew Scripture readings, with review and extension of the grammar acquired. T. Th. 2:30.
2 units, both semesters (RAM)

3. Elementary Arabic.—Socin's Arabic Grammar, followed by Brünnow's Arabic Chrestomathy. T. Th. 3:30.
2 units, both semesters (RAM)

4. The Koran.—Reading and interpretation of selected suras. Prerequisite: course 3, or its equivalent. By arrangement.
2 units, 2d semester (RAM)

BIBLICAL HISTORY AND LITERATURE

DAVID CHARLES GARDNER, Lecturer.

1. Life and Teaching of Christ.—The history of the life and times of Jesus, with a study of His words as recorded in the gospels and the application of His teaching to the life of to-day. Lectures, discussions, and papers. Th. 1:30. 1 unit, both semesters (GARDNER)

PHILOSOPHY

HENRY WALDGRAVE STUART, Professor.
GEORGE HOLLAND SABINE, Assistant Professor.

Courses in Philosophy are not open to first-year students.

1. **Elementary Logic.**—A general course in the principles of Deductive and Inductive Logic with special attention to the important types of fallacious reasoning. M. W. F. 9:15.
3 units, 1st semester (STUART, SABINE)

2. **Elementary Ethics.**—A study of the distinction of Good and Bad in human conduct—its meaning and its rise in the experience of the individual. Texts, lectures, and reports. M. W. F. 10:15.
3 units, 1st semester (STUART)

3. **History of Philosophy.**—Lectures, prescribed reading, and occasional essays. This course is intended for the general student who wishes to know something of the history of philosophical ideas and systems, and their relations to the science, social and political conditions, and general culture of the periods to which they belong. The course will cover the development from the early Greek period to the end of the eighteenth century in Germany, closing with a brief outline of the main philosophical problems of the nineteenth century. M. W. F. 11:15. 3 units, both semesters (SABINE)

4. **Philosophy of the Nineteenth Century.**—An historical study of the development of philosophical problems and theories since Kant. Prerequisite: course 3. (Hours to be arranged.)
3 units, 1st semester (SABINE)

5. **Philosophy in the Life of the Nineteenth Century.** This course will deal with the philosophical aspects of some of the more important social and literary achievements of the nineteenth century. The materials for study will be drawn chiefly from English literature, works being chosen which illustrate types of philosophical thought characteristic of this period. So far as possible, the conceptions thus found in literature will be correlated with technical philosophical systems. No preliminary course is required. M. W. F. 9:15.
3 units, 2d semester (SABINE)

6. **Advanced Logic.**—A study of methods of investigation in use in the natural and social sciences, leading to a discussion of the logical value and philosophical significance of the cardinal assumptions and principles on which these methods are based. Selected investiga-

tions from different fields constitute the material for discussion. Prerequisite: course 1 or an equivalent. M. W. F. 9:15.

3 units, 2d semester (STUART)

7. Historical and Practical Ethics.—A study of important types of ethical theory in the light of the social conditions out of which they arose, and with reference to their practical outcome in conduct, followed by a study of the ethical aspects of certain problems of social and individual life. Lectures, assigned readings, and reports. A continuation of course 2, but open, after consultation, without this requirement. M. W. F. 10:15. 3 units, 2d semester (STUART)

8. History and Applications of the Theory of Evolution.—Lectures and discussions. This course will begin by tracing the history of the theory of evolution from its appearance among the Greeks to its formulation by Darwin. It will then deal with some applications of the evolutionary method outside of biology and with some of the philosophical implications of evolution. T. Th. 10:15.

2 units, 2d semester (SABINE)

9. Problems of Modern Philosophy.—*a. Theory of Knowledge.* A study of the nature and functions of knowledge, with a view to defining the issues involved in contemporary discussion of the subject. Prerequisite: courses 1 and 6, or course 3, or an equivalent. Th. 2:30-4:30, or as otherwise arranged.

3 units, 1st semester (STUART)

b. Metaphysics.—A survey and discussion of the principal problems arising in the attempt to take a comprehensive and unified view of life and the world. Prerequisite: course 9*a* or an equivalent. Th. 2:30-4:30, or as otherwise arranged. 3 units, 2d semester (STUART)

PSYCHOLOGY

FRANK ANGELL, Professor.
LILLIEN JANE MARTIN, Associate Professor.

1. General Psychology.—Lectures and Exercises. Not open to first-year students. Students will use Wundt's Human and Animal Psychology as a book of reference. M. T. W. Th. 11:15.

4 units, 1st semester (ANGELL)

2. Experimental Psychology.—Lectures, one hour; laboratory, two hours. Students are recommended to take this course in connection with courses 1, 5, and 6. Lec. T. 1:30, Lab. T. Th. 1:30-4:30.

3 units, both semesters (ANGELL, MARTIN)

3. Psychology of Evidence.—Open to those who have completed course 1, or its equivalent. T. Th. 11:15.
2 units, 2d semester (ANGELL)

4. Advanced Laboratory Work in Psychology.—M. W. F. 1:30-4:30. 3 units, both semesters (ANGELL, MARTIN)

Applied Psychology.—M. T. W. F. 8:15.
3 or 4 units, 2d semester (MARTIN)

6. Abnormal Psychology.—M. W. F. 8:15.
2 or 3 units, 1st semester (MARTIN)

7. Current Psychological Literature.—In this connection a subsection for the purpose of reading German Psychology will be formed, if so desired. By arrangement.
1 unit, both semesters (ANGELL)

8. Readings in French and German Psychology.
2 units, 1st semester (MARTIN)

9. Research Work.—By arrangement.
(ANGELL, MARTIN)

EDUCATION

ELLWOOD PATTERSON CUBBERLEY, JOHN ANDREW BERGSTRÖM, Professors.
PERCY ERWIN DAVIDSON, Assistant Professor.
MORRIS ELMER DAILEY, Lecturer.
JESSE BRUNDAGE SEARS, Assistant.

The Department of Education offers three main lines of work:

1. Courses of a general nature on the history, function, and administration of public education, intended in part as information courses for the general university student and without reference to the work of teaching. To such students, courses 1, 2, 3, 7, and 10 are recommended.

2. Courses intended to assist other departments in preparing their students for work in secondary schools. All such students should confer with members of the Department of Education as to courses, but in general courses 1, 2, 5, and 6 are recommended if the candidate has not had experience in teaching. Course 6 will be required for the high school teacher's recommendation.

3. Courses primarily for major students, or those making Education a minor, and intended to give special preparation to (*a*) those who desire to become teachers of Education in normal schools or colleges,

(*b*) those who wish to prepare for supervisory or administrative positions in the public schools, and (*c*) those who wish to prepare for special work in the elementary field.

The courses in Education are open to all students as electives or as minor subjects, but only those who desire to prepare for one of the lines of work mentioned above under (3), and whose preparation and experience are satisfactory to the Department, will be accepted as major students. In special cases those without teaching experience may be accepted as major students, but all such must be approved in practice teaching (course 21) before graduation.

Major students begin their work in Education with the sophomore year, taking courses 1 and 2.

1. Public Education in America.—A study of the province and some of the more important problems of public education in the United States. An introductory course. Lectures, following a syllabus, with assigned readings. Open to second-year students. T. Th. 10:15.

2 units, 1st semester (CUBBERLEY)

2. Educational Theory.—An introductory course dealing with topics fundamental to education, such as the nature of infancy, physical and social heredity, the relation of the organism to environment, of instinct to habit, etc. Lectures, following a syllabus, with assigned reading. Open to second-year students. T. Th. 10:15.

2 units, 2d semester (DAVIDSON)

3. History of Education in Europe.—A study of the development of educational ideals and systems from the time of the Greeks and Hebrews to the present, with particular reference to the forces which have operated in the evolution of the various historic ideals and schools. The first semester covers the period up to the Reformation, and the second semester the period from the Reformation to the present. Either semester may be taken separately. Lectures, following a syllabus, with assigned readings. Open to third-year students. M. W. F. 9:15. 3 units, both semesters (CUBBERLEY)

4. Sources for the History of Education.—A more extensive and intensive study of the sources for the History of Education in Europe than is undertaken in connection with course 3. This course may be taken in connection with course 3, or subsequently, but cannot precede it. [Course 4 will not be given in 1909-10.]

2 units, both semesters (———)

5. Educational Psychology.—This course will include a study of such subjects as the psychological bases of courses of study and

methods of teaching, the psychology of learning, experimental pedagogy, genetic psychology, child study, and defective children. The course will require some previous knowledge of general psychology. Those who have not had such preparation should take course 1 in the Department of Psychology before beginning this course. M. W. F. 8:15. 3 units, 2d semester (BERGSTRÖM)

6. Secondary Education.—A course dealing with the organization, scope, and methods of public and private secondary schools in America, and intended primarily for and required of those preparing for the high school teacher's certificate. The work will be as follows: First semester: general principles of teaching; comparative study of the methods recommended in the Report of the Committee of Ten and in later reports of committees dealing with secondary education; discipline, moral training, school management, and school hygiene. Second semester: psychology of adolescence; courses of study; new types of secondary schools, and a comparative study of secondary school systems. Open to seniors and graduate students only. T. Th. 8:15. 2 units, both semesters (BERGSTRÖM)

7. History of Education in America.—An advanced course, dealing with selected problems in the history and present condition of education in the United States. The topic for 1909-10 will be History and Present Condition of Education in the Southern States. M. 3:30-5:30. 2 units, 2d semester (CUBBERLEY)

9. City School Administration.—A study of some of the more important features and problems of city school administration, with a view to the establishment of principles. Open to advanced students, and intended primarily for those preparing for administrative work. T. Th. 10:15. [Course 9 will not be given in 1909-10.]

(CUBBERLEY)

10. State School Administration.—A study of the educational principles underlying the proper administration of school systems in states and counties, and involving a comparative study of the school laws and school systems of the various American states. The course includes a study of such topics as Federal and State policy, forms of control, revenue and its apportionment, the State and the teacher, the State and the child, private and sectarian education, and State oversight and control. Open to third-year students. M. W. F. 10:15.

3 units, both semesters (CUBBERLEY)

11. Statistical Method.—The theory of statistical work and the application of statistical method to the study of typical problems in

the different fields of education. [Course 11 will not be given in 1909-10.] (Cubberley)

12. Foreign School Systems.—A comparative study of the more important foreign school systems, their policy of organization, ideals of work, methods of instruction, training of teachers, courses of study, statistics, and recent reforms. Education 3 should precede this course. M. W. F. 8:15. 3 units, 1st semester (Bergström)

13. Logic of Education.—A study of the significance for education of the theory of knowledge and the psychology of thinking. Herbartian "General Method" will be reviewed. Open to students who have taken elementary work in psychology or logic. T. Th. 9:15. 2 units, both semesters (Davidson)

14. Social Phases of Education.—The course treats of the bearing on education of selected topics in social psychology, such as the individual and society, suggestion and choice, custom, tradition, imitation, and play. The course should be preceded by elementary work in psychology. T. Th. 11:15. 2 units, 1st semester (Davidson)

15. Moral Education.—A study of the important ethical facts and principles underlying education. The course presupposes elementary work in psychology or ethics. [Course 15 will not be given in 1909-10.] 2 units, 1st semester (Davidson)

16. Educational Theory: Advanced Course.—The course deals with phases of biology and psychology more directly concerned in education. Topic for 1908-09: Recapitulation. The same topic will be continued through 1909-10. The course presupposes elementary work in psychology, bionomics, and the nervous system. W. 3:30-5:30. 2 units, both semesters (Davidson)

17. The Curriculum.—A discussion of the relative importance of the historical, social, and psychological factors concerned in the formulation of the school and college curriculum. The topic for the first semester of 1909-10 will be, "Industrial Education in Relation to Child Labor, Juvenile Delinquency, and Compulsory Attendance," and for the second semester, "The Boys' Club Movement, Student Activities, and Organized Play." Open to supervisors, teachers, and students on consultation with the instructor. Either semester may be taken separately. S. 9:30. 2 units, both semesters (Davidson)

18. The Training of Teachers.—This course deals with the organization of normal schools and the professional preparation of

teachers, and is primarily intended for those entering on the work of training and supervising teachers. T. 3:30-5:30.

2 units, second semester (Dailey)

19. Pedagogical Seminary.—A study of special problems in educational psychology, school hygiene, or comparative pedagogy. The topic to be considered will be announced at the beginning of the year. T. 2:30-4:30. 2 units, both semesters. (Bergström)

20. Thesis Work.—In certain courses, students may be given an additional hour of credit on presentation of a satisfactory thesis on an assigned topic embodying the results of independent work. The consent of the instructor is necessary before registering.

1 unit, both semesters

21. Special Courses.—Special work in independent research will be provided for students prepared to do advanced work, the nature of the investigation being determined by the student's preparation and needs. Such work will include studies in administration, educational history and the curriculum. (Bergström, Cubberley, Davidson)

22. Practice in Teaching.—Actual practice in the handling of classes and the giving of instruction, with accompanying conferences, is now required of all inexperienced candidates for the High School Teacher's Certificate. This work may be taken at the San Jose State Normal School, which makes special arrangements for the graduates of this University, or at any other California State Normal School. Hours for teaching and conferences must be arranged with the Normal School. Intended for graduate students only.

4 units, either semester (Dailey)

23. Journal Club.—Regular meetings of instructors and advanced students for the discussion of new books and current literature. By arrangement.

1 unit, for the year (Cubberley, Bergström, Davidson)

Courses in Other Departments

The following special Teachers' Courses in other departments are recommended to students preparing to teach. Such courses are usually necessary for the departmental recommendation, but do not count again as a part of the required units in Education.

a. Teachers' Course in Greek.—[See Department of Greek.]

b. Teachers' Course in Latin.—[See Department of Latin.]

c. Teachers' Course in German.—[See Department of Germanic Languages.]

d. Teachers' Course in French.—[See Department of Romanic Languages.]

e. Teachers' Course in English.—[See Department of English.]

f. Teachers' Course in History.—[See Department of History.]

g. Teachers' Course in Drawing.—[See Department of Drawing.]

h. Teachers' Course in Elementary Physics.—[See Department of Physics.]

HISTORY

Ephraim Douglass Adams, Arley Barthlow Show, Herbert Eugene Bolton, Professors.

Edward Benjamin Krehbiel, Associate Professor.

Henry Lewin Cannon*, Payson Jackson Treat, Assistant Professors.

Percy Alvin Martin, Sedley Lynch Ware, Instructors.

[During 1908-09 several instructors gave courses in the Department whose work does not appear in the list of courses offered for 1909-10. These courses were as follows:

By Dr. John Hamilton Blair:

(1) American Revolutionary History. 3 units, 1st semester.

(2) American Diplomatic History. 2 units, both semesters.

(3) Modern European Colonizations. 3 units, 2d semester.

By Dr. Sedley Lynch Ware:

(1) Mediæval History. 3 units, both semesters.

(2) Seminary in Mediæval History. 2 units, both semesters.

By Professor James Albert Woodburn, of Indiana University:

(1) United States History, 1789-1840. 3 units, 2d semester.

(2) Period of Reconstruction. 2 units, 2d semester.

By Professor Jesse Macy, of Iowa College:

(1) United States History, 1840-1860. 3 units, 2d semester.

(2) Party Organization and Machinery (with Mr. Woodburn). 2 units, 2d semester.

(3) Seminary in United States Constitutional History, 2 units 2d semester.]

The Teacher's Recommendation.—To obtain a Teacher's Recommendation in History the applicant must have completed, in a manner acceptable to the Department, three of the courses 3, 4 (or 11), 5, and

* Absent on leave, 1909-10.

7, one advanced course (throughout one year), and the Teachers' Course in History.

1. Historical Training Course.—A practical course in the finding and handling of historical material. Required of first-year History majors. T. 8:15. 1 unit, both semesters (MARTIN)

[History of Greece.—See Greek 10.]

[History of Rome.—See Latin 29.]

3a. The Early Middle Ages, 476-1095.—A general course, open to all students who have had one year in ancient history, or a satisfactory equivalent. M. W. F. 9:15. 3 units, 1st semester (SHOW)

3b. The Later Middle Ages, 1095-1492.—A continuation of course 3*a*. Open to all students who have had course 3*a*, or a satisfactory equivalent. M. W. F. 9:15. 3 units, 2d semester (SHOW)

4a. English History to 1485.—General outline course, open to first-year students. M. W. F. 10:15.
3 units, 1st semester (WARE)

4b. English History after 1485.—A continuation of course 4*a*. M. W. F. 10:15. 3 units, 2d semester (WARE)

5a. Modern European History, 1500-1715.—A general outline course, open to students who have had courses 3*a* and 3*b*, or a satisfactory equivalent. T. Th. 9:15. 2 units, 1st semester (KREHBIEL)

5b. Modern European History, 1715-1900.—A continuation of course 5*a*. T. Th. 9:15. 2 units, 2d semester (KREHBIEL)

6. American Colonial and Revolutionary History. Not open to first-year students. [Not given in 1909-10.]
2 units, both semesters (———)

7. United States History since 1815. Open to students who have taken courses 4*a* and 4*b*, or a satisfactory equivalent. T. Th. 10:15.
2 units, both semesters (ADAMS)

8. Westward Expansion and the Influence of the West.—A study of the westward movement from the Atlantic seaboard to the Pacific, and of the influence of the West upon national and international affairs at different stages of advance. Open to History majors who have had one other course in American history and to all but first-year students of other departments. M. W. F. 9:15.
3 units, both semesters (BOLTON)

9a. The Far East.—An account of the relations between Western nations and the peoples of Eastern Asia. The history of the Portuguese,

Dutch, British, and French possessions in the Far East. Not open to first-year students. M. W. F. 10:15.

3 units, 1st semester (TREAT)

9b. The Far East.—China, Japan, the Philippines. A continuation of course 9*a*. M. W. F. 10:15. 3 units, 2d semester (TREAT)

11. English Constitutional History.—Open to students who have taken courses 4*a* and 4*b*, or a satisfactory equivalent. T. Th. 11:15. [Not given in 1909-10.] 2 units, both semesters (CANNON)

12. History of Germany.—General outline course, not open to first-year students. M. W. F. 11:15.

3 units, both semesters (MARTIN)

12a. History of France.—General outline course, not open to first-year students. W. F. 8:15. 2 units, both semesters (MARTIN)

13a. The Ancient Church.—A general course in Church History from the Apostolic Age to Gregory the Great (A. D. 1-590), with special reference to its connection with the general movements of the age. Open to all except first-year students. T. Th. 11:15.

2 units, 1st semester (SHOW)

13b. The Mediæval Church.—A continuation of course 13*a*, to the end of the Crusades and the beginning of the church reform movement. T. Th. 11:15. 2 units, 2d semester (SHOW)

14. Early Germanic Institutions.—From the earliest times to the close of the migrations. Lectures, recitations, and reports. Ability to read German desirable. Not open to first- and second-year students. T. Th. 2:30-3:30. 2 units, 1st semester (SHOW)

15a. The French Revolution and Napoleon.—A lecture course. Outside readings and reports. Open to students who have had courses 5*a* and 5*b*. T. Th. 10:15. 2 units, 1st semester (KREHBIEL)

15b. Europe in the Nineteenth Century.—A continuation of the preceding course. T. Th. 10:15.

2 units, 2d semester (KREHBIEL)

16. Teachers' Course.—Lectures, recitations, and practice covering the topics in history customarily taught in preparatory schools. T. Th. 2:30-3:30. 2 units, 2d semester (SHOW)

18a. American and English Relations During the Civil War.—Use of British and American documentary material. Open to third-year students who have taken general courses in English and American history. M. W. F. 11:15.

3 units, 1st semester (ADAMS)

18b. American and English Relations During the Civil War.—A continuation of course 18*a*, with study of magazines, papers, and non-political writings of the period. M. W. F. 11:15.

3 units, 2d semester (ADAMS)

19. The Anglo-American Southwest.—Special portions of the field will be emphasized each year. Open to students who have had course 8, and to others by special permission. W. F. 11:15.

2 units, both semesters (BOLTON)

21. Tropical Colonization in the Far East.—A study of the present methods of the English, Dutch, French, German, and American peoples in managing tropical dependencies in the Far East. Open to students who have taken courses 9*a* and 9*b*. T. Th. 9:15.

2 units, 1st semester (TREAT)

22. History of Australasia.—An account of British colonization in Australia and New Zealand to the present time. Open to students who have taken courses 9*a* and 9*b*. T. Th. 9:15.

2 units, 2d semester (TREAT)

ADVANCED COURSES

Intended primarily for graduate students, but open to advanced undergraduates, with permission of the instructors.

27. Painting of the Italian Renaissance.—A practical study of one or more great Renaissance artists. Subjects for 1909-10, "Botticelli" and "Correggio." Ability to read German and French is desirable. F. 3:30.

1 unit, each semester (SHOW)

28. The Spanish Southwest. A seminary course on selected portions of the field, based largely on a study of materials from foreign archives. Open to students who have had course 19, and to others of suitable preparation. A reading knowledge of Spanish is requisite. Intended primarily for graduates. T. Th. 3:30.

2 units, both semesters (BOLTON)

29. English Constitutional History. Subject in 1908-09 was "Magna Charta." [Not given in 1909-10.]

2 units, both semesters (CANNON)

30. The Renaissance in Italy. Reading ability in French and German desirable. M. W. 1:30.

2 units, both semesters (MARTIN)

31. American Diplomatic History Since 1815.—Open to students who have had course 18, and to others by special permission. T. Th. 1:30.

2 units, both semesters (ADAMS)

32. The Spread of Protestantism in the Sixteenth Century.—A study of the sources. M. W. 2:30.
2 units, both semesters (KREHBIEL)

35. Seminary in American-European Relations in Nineteenth Century.—Assignment of topic to each student and thesis required. By appointment. 2 units, both semesters (ADAMS)

36. The Philippines under Spain.—F. 2:30-4:30.
2 units, both semesters (TREAT)

37. Seminary in United States Constitutional History.—T. Th. 2:30. 2 units, both semesters (WARE)

ECONOMICS AND SOCIAL SCIENCE

ALLYN ABBOTT YOUNG, BURT ESTES HOWARD, Professors.
THORSTEIN VEBLEN, ALBERT CONSER WHITAKER, Associate Professors.
HARRY ALVIN MILLIS, JAMES MARVIN MOTLEY, Assistant Professors.
IRA BROWN CROSS, Acting Instructor.

The courses offered by the Department of Economics and Social Science fall into two general groups. The elementary courses (1-13) are designed for the general student as well as for those specializing in the department, and include discussions of the more important contemporary economic and social problems—the understanding of which is believed to be a condition of good citizenship. The advanced and graduate courses offer to properly prepared students opportunities for the intensive study of special problems and for training in the methods of investigation used by economic science.

While no attempt is made to offer technical training in business methods, students looking forward to a business career will find courses 1, 4, 5, 6, 8, 10, and 11 valuable as affording a survey of important business institutions and relations. An endeavor is made, however, to render some of the courses offered by the department of direct technical value to students planning to enter the government service, or to engage in the work of public or private institutions for social betterment.

1. Elements of Economics.—A descriptive course, constituting an introduction to the subject. Must precede all other courses in the department. Two lecture hours and one quiz hour each week. M. W. F. 9:15 3 units, both semesters (YOUNG, CROSS)

2. Principles of Economics.—An intensive study of the principles of economics as developed in course 1. Required of Economics majors. T. Th. 8:15. 2 units, both semesters (MILLIS)

4. Money and Banking.—Forms and laws of money; the money question. Credit and banking; the money market and foreign exchanges. M. W. F. 9:15. 3 units, both semesters (WHITAKER)

5. Railway Transportation.—The present American railway system, railway finance, railway statistics, theory of rates, methods of public control in Europe, Australasia, and America. M. W. F. 11:15. 3 units, 1st semester (YOUNG)

6. The Corporation and Trust Problem.—Elementary survey of corporation law; history of corporations and corporate combinations, pools and trusts, in relation to public policy; present tendencies in legislative control. T. Th. 9:15. 2 units, both semesters (WHITAKER)

8. Public Finance.—A general course dealing chiefly with the principles underlying public expenditures, revenues, debts, and financial administration. M. W. F. 8:15. 3 units, 1st semester (MILLIS)

9. Social Statistics. A study of the structure and movement of the population, with special reference to the methods and results of modern vital statistics. M. W. F. 11:15. 3 units, 2d semester (YOUNG)

10. The Labor Problem. The modern industrial system, wage system, collective bargaining, and other features of trade unionism, strikes, boycotts and lock-outs, arbitration and conciliation. M. W. F. 10:15. 3 units, 1st semester (MILLIS)

10a. Immigration and Race Problems.—A study of the social and economic problems resulting from the mingling of races in the United States. M. W. F. 10:15. 3 units, 2d semester (MILLIS)

11. Labor Legislation and Economic Reform.—The growth and characteristics of labor legislation; the bearing of important legal decisions with regard to labor; discussions of wages, and of certain economic reform measures. T. Th. 9:15. 2 units, both semesters (MOTLEY)

12. Social Economics.—A general survey of the leading economic, social, and individual causes of social disorder and poverty; methods and principles of modern relief policies; specific social problems; social legislation and other current movements for social betterment. M. W. F. 9:15. 3 units, both semesters (MOTLEY)

13. Socialism.—The history of socialism and allied social movements, together with an analysis of socialistic doctrines. M. W. F. 8:15. 3 units, 1st semester (Cross)

Advanced and Graduate Courses

15. American Methods of Taxation.—An intensive study of the federal and state taxes, including the customs and internal revenue duties, "direct" income, business and inheritance taxes, the general property and corporation taxes. Should be preceded by Economics 8. M. W. F. 8:15. 3 units, 2d semester (Millis)

16. History of Political Economy.—A survey of the growth of economic theories and opinions in modern times, together with an inquiry into the character and methods of current economic science. Prerequisites: courses 1 and 2. M. W. F. 11:15.
3 units, both semesters (Veblen)

17. Value and Income.—A study of the factors governing interest, rents, wages, and profit, preceded by a review of the theory of value. T. Th. 11:15. 2 units, both semesters (Whitaker)

18. Seminary in Social Economics.—Certain social institutions, relief measures, and labor problems will be studied critically, the object being to familiarize the student with available materials and to acquaint him with methods of social research. W. 1:30.
2 units, both semesters (Motley)

19. Economic Factors in Civilization.—The bearing of economic motives and conditions upon the development of culture, art, religion, science, and the institutions of domestic and civic life. Students admitted only after consultation with instructor. T. Th. 2:30.
3 units, both semesters (Veblen)

20. Seminary in Statistics.—Investigation of selected social and economic problems with special reference to the use of the statistical method. [Given in 1908-09 and alternate years.] M. 2:30.
2 units, both semesters (Young)

21. Seminary in Railway and Corporation Finance.—Study of the financial policies of selected corporations, with special reference to the relation of such policies to the public interest. Prerequisites: courses 5*a* and 6. [Given in 1909-10 and alternate years.]
2 units, both semesters (Young)

23. Economic Conference.—Bi-weekly meetings of instructors and graduate students for discussion of current economic literature and the presentation of the results of original research. W. 2:30.

Political Science

30. Comparative Federal Government.—A comparative study of the governments of Germany, Switzerland, and the United States. Open to students who have taken History 7, History 5*b*, and History 12, or their equivalents. A reading knowledge of German is desirable but not required. M. W. F. 10:15.

3 units, both semesters (Howard)

31. American Politics.—An investigation into the organization and administrative functions of the government, the competence of its courts, problems touching citizenship, etc. Open to students who have taken History 7 or History 19, or an equivalent. M. W. F. 8:15.

3 units, 1st semester (Howard)

32. Municipal Government.—Including a critical study of various municipal charters and forms of city government, together with an investigation of certain problems in municipal administration. M. W. F. 8:15. 3 units, 2d semester (Howard)

34. Seminary in Political Science.—An examination of the basal theories underlying political institutions. Open only to students who have a good knowledge of general and constitutional history, and who read German or French readily. T. 2:30.

2 units, both semesters (Howard)

LAW

Charles Henry Huberich*, Frederic Campbell Woodward, Arthur Martin Cathcart, Wesley Newcomb Hohfeld, Professors.

Howard L. Smith, Acting Professor.†

Charles Andrews Huston, Joseph Walter Bingham, Associate Professors.

John Slater Partridge, Lecturer.

The purpose of the Department is to provide a thorough legal education for students who are fitted by their maturity and their previous academic training to pursue professional study under university methods of instruction. The course of study covers three academic years and constitutes an adequate preparation for the practice of law in any English-speaking jurisdiction. Elective courses in Code Pleading and in California Practice are offered, and graduates of this school are

*Absent on leave, 1909-10.

†For 1909-10.

admitted to the California Bar without examination. A comprehensive group of courses in Public Law, of value not only to the law student but to the student who contemplates entering the diplomatic, consular or other government service, is a feature of the course.

The Pre-legal Course

For undergraduate students who enter with the intention of preparing for the study of law, a Pre-legal course is offered by the University under the direction of the Faculty of Law. This course ordinarily occupies four years and requires that the student obtain 120 units of university credit. The equivalent of three years (90 units of credit) is given to general culture studies (for instruction in which no tuition is charged) and of one year (30 units of credit) to the professional study of law.

The 120 unit-hours of work usually are apportioned as follows: To the first and second years, 30 units of general culture studies each; to the third year, 23 units of general culture studies and the course in Contracts; to the fourth year, 7 units of general culture studies and 23 units in law. The 90 unit-hours of general culture studies may be taken in three years, and the fourth year be devoted entirely to law study. No student in this course can begin the professional study of law until he has received credit for at least 50 unit-hours.

In arranging courses in general culture subjects it is expected that 60 units will be applied as follows: To Latin, 4, or to a modern language other than English and the one chosen to fulfil the next requirement, 8; to either French, German, or Spanish, 6; to English, 10, which shall include courses A, 2a, 2b, and 24; to History, 15; to Economics, 13; to Mathematics or Logic, 6; and to an elementary science course with laboratory work, 6.

Students who satisfactorily complete the Pre-legal course are granted the degree of Bachelor of Arts by the University, and by reason of having had one year of law study as undergradates may satisfy the requirements for the degree of Juris Doctor by two years of graduate law study.

Admission to the Professional Course

Admission to the Professional course in law is granted to students duly enrolled in the University, as follows:

1. To students who have received the degree of Bachelor of Arts, or an equivalent degree, from this University or some other institution of recognized collegiate rank.

2. To students who have received credit for at least eighty unit-hours (substantially three years) in the Pre-legal course offered by this University, or the substantial equivalent thereof in some other institution of recognized collegiate rank. (See page 10.) Students in such Pre-legal course, however, who have received credit for fifty unit-hours (substantially two years), will be permitted to take the course in the law of Contracts.

3. In the discretion of the Faculty of Law, to students over twenty-one years of age, who cannot meet the foregoing requirements, but who have had experience in business or who evince uncommon ability. Such special law students will be afforded all the privileges of the School, and will be given a certificate in lieu of the degree awarded to regular students.

Admission to Advanced Standing in Law

By special vote of the Faculty of Law credit may be given without examination for work satisfactorily completed at other law schools, but in no case will credit be given for work not done in residence at an approved law school. Examinations for advanced standing in law, if required, may be taken in places other than at the University. Applications for such examinations should be made not later than April 1, for the May examinations, and not later than November 15, for the December examinations. A fee of five dollars per course is charged for examinations not taken at the University.

The Professional Course

The work of the first year in Law is required and consists of the following courses: Contracts, Criminal Law, Torts, Introduction to Property, Equity I, and Agency.

A pre-legal student is expected to take Introduction to the Study of Law in his second year, Contracts in his third year, and the remaining courses of the first year in Law in his fourth year.

The work of the second and third years in Law is elective, but the following courses may not be taken before a student has completed the work of two full years in Law: Administrative Law, Conflict of Laws, Private Corporations, Municipal Corporations, Evidence, and California Practice.

The courses offered in Law, roughly grouped for purposes of convenience according to the nature and analogies of the subject matter, are as follows:

A. Elements of Business Law.—Contracts; sale of goods; bailments; insurance; suretyship and guaranty; bills of exchange, promis-

sory notes, and checks; agency, master and servant; partnerships, corporations; property rights; wills and deeds, liens, pledges, and mortgages; landlord and tenant; sale and purchase of realty; the relations between trustee and cestui. Not open to law students or pre-legal students. Open to all other students having 30 units' credit. Textbook: Huffcut's Elements of Business Law. Lectures, recitations and assigned reading. [Not to be given in 1909-10.]

2 units, both semesters

(Huberich, Woodward, Cathcart, Hohfeld, Bingham)

1. Introduction to the Study of Law.—*Part I.* Nature, origin, and evolution of law; sources of law; sanctions of law; legal rights and duties; classification of law; historical sketch of English and American law. *Part II.* The methods of legal study; the use of reports, digests, encyclopedias, and treatises; practice in the analysis of cases and in the preparation of abstracts and briefs. Open to students having twenty-five units' credit. Wambaugh, Study of Cases, also selected cases. T. Th. 11:15.

2 units, 2d semester (Huston)

2. Criminal Law.—Nature and sources of criminal law; crime as an act; attempts; criminal intent; circumstances affecting illegality of act; specific offenses; crimes against the person, larceny and allied offenses, crimes against the dwelling-house, conspiracy. Open to pre-legal students having 80 units' credit, and to all law students. Beale, Cases on Criminal Law (2d ed.) T. W. Th. F. 11:15.

4 units, 1st semester (Smith)

3. Constitutional Law.—Nature and sources of American constitutional law; adoption and amendment of constitutions; separation of powers; power of judiciary to declare acts of the legislative and executive branches of government unconstitutional; citizenship; privileges and immunities of citizenship; due process of law; police power; eminent domain; taxation; ex post facto and retroactive laws; laws impairing the obligation of contracts; regulation of commerce; money; war; government of territories. Open to second- and third-year law students and to well-prepared fourth-year students in history, economics, and political science. [To be given in 1909-10 and in alternate years thereafter.] Thayer, Cases on Constitutional Law. M. W. F. 10:15. 3 units, both semesters (Smith)

4. Administrative Law and Public Officers.—Administrative regulations; jurisdiction, discretion, adjudication; enforcement of orders; habeas corpus; mandamus; certiorari; equitable jurisdiction in

public law. Open to third-year law students. [Not to be given in 1909-10.] Goodnow, Cases on the Law of Officers, and Goodnow, Cases on Government. 3 units, 1st semester (HUSTON)

5. **Municipal Corporations.**—General nature; corporate capacity; self government; creation, annexation, division, dissolution, succession; modes of action, ratification and curative acts; estoppel by recitals; municipal police power; local improvements and services, including special assessments; municipal property, especially public streets; municipal contracts; expenditure and donations; indebtedness and its constitutional limit; liability. Pre-requisite: course 17. Open to third-year law students. Case-book to be announced. M. W. 10:15. 2 units, 2d semester (HUSTON)

6. **International Law.**—Nature and sources of international law; territorial rights of states; territorial jurisdiction; jurisdiction on high seas; nationality; belligerency; neutrality. Open to second- and third-year law students, and to well-prepared fourth-year students, in history, economics, and political science. [To be given in 1910-11 and in alternate years thereafter.] Scott, Cases on International Law. 4 units, 2d semester (HUBERICH)

7. **Conflict of Laws.**—Nature and force of foreign law; comity; jurisdiction over persons and things; jurisdiction of courts; creation of personal rights and of rights of property; torts and contracts; enforcement of rights. Open to third-year law students only. [To be given in 1909-10 and in alternate years thereafter.] Beale, Cases on Conflict of Laws. M. W. F. 8:15 and Th. 11:15. 4 units, 2d semester (SMITH)

8. **Admiralty.**—Admiralty jurisdiction, basis; maritime contracts, torts, and crimes; maritime liens, ex contractu, ex delicto, priorities, discharge; bottomry and respondentia obligations; salvage; general average. Open to second- and third-year law students. [To be given in 1910-11 and in alternate years thereafter.] Ames, Cases on Admiralty. 2 units, 1st semester (HUSTON)

9. **Roman Law.**—A study of the Institutes of Gaius and Justinian and of selected titles from the Digest, Code, and Novels. A reading knowledge of Latin and of either German or French will be required. Open to second- and third year law students. [Not to be given in 1909-10.] 2 units, both semesters (HUBERICH)

10. **Persons.** Marriage: promise to marry; marriage contract at common law and under statutes; rights of husband and wife in each other's property; status of married women; transactions between hus-

band and wife; torts affecting marital relations; separation; divorce. Parent and child: custody; services and earnings; torts to children; torts by children; adoption; illegitimacy. Infancy: period of infancy; voidable acts; disaffirmance, ratification; contracts for necessaries; obligations created or authorized by law; liability for tort; guardian and ward. Insanity. Drunkenness. Alienage. Open to second- and third-year law students. [To be given in 1909-10 and in alternate years thereafter.] Woodruff, Cases on Domestic Relations (2d ed.). T. Th. 10:15. 2 units, 1st semester (Woodward)

11. Introduction to Property.—Distinction between real and personal property; acquisition of rights in personal property; gifts; bailment; lien; pledge. Real property: tenures; estates; seisin and conveyance; Statute of Uses; incidents of ownership in real property; fixtures; easements; covenants as to use; public rights; franchises; rents. Open to pre-legal students having 80 units' credit, and to all law students. Gray, Cases on Property, Vols. I and II (2d ed.). M. W. F. 10:15. 3 units, both semesters (Bingham)

12. Transfer of Land inter vivos.—Methods of transfer of interests in land at common law and under statutes; creation of interests in land by agreement or conveyance; interpretation of instruments of transfer; covenants running with the land; covenants for title; priority; fraudulent conveyances; recording. Open to second- and third-year law students. [To be given in 1910-11 and in alternate years thereafter.] Case-book to be announced.
4 units, 1st semester (Bingham)

13. Wills and Administration.—Acquisition of property on the death of former owner, escheat, descent, occupancy, gifts mortis causa; the making, revocation, and republication of wills, probate and administration, payment of legacies and distribution, ademption and lapse of legacies. Open to second- and third-year law students. Prerequisite: course 11. Gray, Cases on Property, Vol. IV. (2d ed.). M. W. Th. F. 8:15. 4 units, 1st semester (Bingham)

14. Landlord and Tenant.—The law pertaining to the relation of landlord and tenant. Open to second- and third-year law students. [To be given in 1910-11 and in alternate years thereafter.] Selected cases and legislative enactments. T. Th. 9:15.

15. Future Interests.—Conditional estates; reversions and remainders; vesting of estates; future interests in property other than at common law; powers; the rule against perpetuities. Prerequisite: course 11. Open to second- and third-year law students. [To be given

in 1910-11 and in alternate years thereafter.] Gray, Cases on Property, Vols. V and VI. 4 units, 1st semester (BINGHAM)

16. **Water Rights and Irrigation Law.**—A course in the intensive study of the law of waters, with especial reference to water rights in the Western States. Open to second- and third-year law students. Selected cases and legislative enactments. T. Th. 8:15.

2 units, 2d semester (BINGHAM)

17. **Mining Law.**—A general course on the law pertaining to mining, with especial reference to mining rights in the Western States and Alaska. Open to second- and third-year law students. Selected cases and legislative enactments. T. Th. 8:15

2 units, 2d semester (BINGHAM)

18. **Torts.**—Trespass to person, to real property, and to personal property; excuses for trespass; conversion; legal cause; negligence; contributory and imputed negligence; plaintiff's illegal conduct as a defense; duties of land-owners; hazardous occupations; liability for animals; deceit; defamation, slander, libel, privilege, malice; malicious prosecution, criminal and civil; interference with social and business relations, inducing breaches of duty, fair and unfair competition, strikes, boycotts, business combinations. Open to pre-legal students having 80 units' credit, and to all law students. Ames and Smith, Cases on Torts, Vols. I and II and Supplement. Daily 9:15.

5 units, 1st semester (CATHCART)

19. **Contracts.**—Offer and acceptance; consideration; contracts under seal; contracts for the benefit of third persons; assignments; joint and several contracts; the Statute of Frauds; conditions; impossibility; illegality; discharge of contracts. Open to pre-legal students having 50 units' credit, and to all law students. Williston, Cases on Contracts. First semester, T. W. Th. F. 8:15; second semester, M. W. F. 8:15.

4 units, 1st semester; 3 units, 2d semester (WOODWARD)

20. **Quasi-Contracts.**—Sources, extent, and nature of the obligation; distinctions between quasi-contract and pure contract and between quasi-contract and tort; obligation arising from benefits conferred in the absence of contract; obligation arising from benefits conferred under a contract but without the receipt of an equivalent. Open to second- and third-year law students. [To be given in 1910-11 and in alternate years thereafter.] Woodruff, Cases on Quasi-Contracts.

3 units, 2d semester (CATHCART)

21. **Agency.**—Nature of relation; appointment; liabilities of principal for agent's torts, contracts, crimes; liabilities of agent; parties to writings; undisclosed principal doctrines; delegation of agency; termination; ratification. Pre-requisites: course 18 and first semester of course 19. Open to pre-legal students having 80 units' credit and to all law students. Wambaugh, Cases on Agency. T. W. Th. F. 9:15.
4 units, 2d semester (HUSTON)

22. **Bills and Notes.**—This course considers all types of negotiable paper, and discusses in detail the law of bills of exchange, notes, and checks, including: formal requisites; acceptance; indorsement; transfer; extinguishment; obligation of parties; diligence; specialty character; the effect of the Negotiable Instruments Law. Open to second- and third-year law students. [To be given in 1910-11 and in alternate years thereafter.] Ames, Cases on Bills and Notes.
4 units, 2d semester (HUBERICH)

23. **Sales.**—Subject matter of sale; executory and executed sales; bills of lading and jus disponendi; stoppage in transitu; fraud; factors acts; warranty and remedies for breach of warranty; Statute of Frauds. Open to second- and third-year law students. Williston, Cases on Sales (2d ed.). T. Th. 8:15 and M. W. 10:15.
4 units, 2d semester (WOODWARD)

24. **Partnership.**—Nature of a partnership, its purposes, and members; creation of partnerships; nature of partner's interest; firm name and good will; mutual rights and duties of partners; actions between partners, at law and in equity; powers of partners; liability for acts of partners in contract and tort; general liability of partners; dissolution and notice; consequences of dissolution; dissolution agreements respecting debts; distribution of assets to creditors, and between partners; limited partnerships. Open to second- and third-year students. [To be given in 1910-11 and in alternate years thereafter.] Burdick, Cases on Partnership.
3 units, 2d semester (WOODWARD)

25. **Private Corporations.**—Nature of a corporation and its relation to its stockholders; creation of a corporation; de facto corporations; stock subscriptions; promoters; interpretation of charters; implied powers; formalities of corporate contracts; dividends; transfer of stock; forfeiture of charters; contracts; powers and duties of directors; rights of stockholders; corporate liability for torts, crimes, and contempts; ultra vires transactions; rights and remedies of corporate creditors; preferences by corporations; stockholders' liability; intercorporate relations; purchase by a corporation of its own stock; dis-

solution of corporations; corporate receiverships; foreign corporations; limits of legislative control. Open to third-year law students only. Smith, Cases on Private Corporations. M. T. W. Th. 11:15.

4 units, 1st semester (HUSTON)

26. **Common Carriers and Public Service Companies.**—Common carriers of goods and persons; liability; limitation of liability; bills of lading; stoppage in transitu; connecting carriers; tickets; baggage; compensation and lien. The nature, rights, and duties of public calling as exemplified by railway, telegraph, telephone, gas, water, irrigation, and other public service companies. Open to second- and third-year law students. [To be given in 1909-10 and in alternate years thereafter.] Beale, Cases on Carriers; Wyman, Cases on Public Service Companies. M. W. F. 11:15.

3 units, 2d semester (CATHCART)

27. **Insurance.**—Marine, fire, and life insurance. Insurable interest in various kinds of policies; concealments; misrepresentations; warranties and other matters affecting the validity of the contract; amount of recovery; subrogation; waiver, estoppel, election; powers of agents; assignees and beneficiaries. Open to second- and third-year law students and to others by special permission. [To be given in 1909-10 and in alternate years thereafter.] Wambaugh, Cases on Insurance. T. Th. 9:15 and F. 11:15.

3 units, 1st semester (HUSTON)

28. **Bankruptcy.**—Jurisdiction of the United States and the States; who may be a bankrupt; who may be petitioning creditors; acts of bankruptcy; what property passes to the trustee; provable claims; protection; exemptions and discharge. Open to second- and third-year law students. [To be given in 1910-11 and in alternate years thereafter.] Lectures and assigned reading. No credit.

10 lectures, 2d semester (WOODWARD)

29. **Suretyship.**—Personal suretyship compared with real suretyship (mortgages, pledges, liens, etc.); suretyship obligations compared with insurance and indemnity obligations; guaranty and other forms of suretyship in relation to the Statute of Frauds; suretyship in transactions involving negotiable instruments; fidelity, contract and judicial bonds; surety's defenses due to original defects in his obligation or to its subsequent discharge; surety's right to subrogation, indemnity, contribution or exoneration; creditor's right to surety's securities. This course must ordinarily precede that on Mortgages. Open to second-

and third-year law students. [To be given in 1909-10 and in alternate years thereafter.] Ames, Cases on Suretyship. M. W. F. 10:15.
3 units, 1st semester (Hohfeld)

30. **Mortgages.**—All forms of mortgage security, both real and chattel; essential elements of legal and equitable mortgages; legal and equitable rights, powers and remedies of mortgagor and mortgagee with respect to title, dower, curtesy, possession, rents and profits, waste, collateral agreements, foreclosure, redemption; priorities; marshalling; extension of mortgages; assignment of mortgages; discharge of mortgages. This course must ordinarily be preceded by that on Suretyship. Open to second- and third-year law students. [To be given in 1909-10 and in alternate years thereafter.] Kirchwey, Cases on Mortgage. M. Th. F. 10:15. 3 units, 2d semester (Hohfeld)

31. **Equity I.**—Historical development of equity; relation between equitable rights and powers and legal rights and powers; general principles relating to jurisdiction, procedure and remedies; specific performance of contracts with special emphasis on the relations between vendors and purchasers of realty; introduction to mortgages; bills for an account; specific reparation and prevention of torts, including waste, trespass, nuisance, disturbance of easements, infringement of patents and copyrights, interference with business relations. Open to pre-legal students having 80 units' credit, and to all law students. Ames, Cases in Equity Jurisdiction, Vol. I. M. T. W. Th. 8:15.
4 units, 2d semester (Hohfeld)

32. **Equity II: Trusts.**—Trusts considered in comparison with other equitable and legal relations; nature and requisites of trusts with respect to consideration, subject-matter, the trustee, the *cestui que trust;* sufficiency of language in wills and deeds creating trusts; kinds of trusts: express, constructive, and resulting trusts, private and charitable trusts; transfer of the respective interests of trustee and *cestui que trust* by act of party and by marriage, death, etc.; rights and remedies of creditors of trustee and *cestui que trust;* priorities with respect to trusts and other equitable interests; resignation or removal of trustee; duties of trustee as to general execution of the trust and as to investment of the trust funds. Open to second- and third-year law students. [To be given in 1910-11 and in alternate years thereafter.] Ames, Cases on Trusts (2d ed.); also selected cases. M. T. W. Th. 8:15. 4 units, 1st semester (Hohfeld)

33. **Equity III.**—Interpleader; bills of peace and quia timet; cancellation of contract; clouds on title; perpetuation of testimony; rights of future enjoyment; reformation and rescission of contract; mistake,

fraud, misrepresentation; duress and undue influence. Open to second- and third-year law students. [To be given in 1910-11 and in alternate years thereafter.] Ames, Cases in Equity Jurisdiction, Vol. II.

2 units, 2d semester (HUSTON)

34. **Damages.**—This course deals with the functions of court and jury in estimating damages; exemplary, liquidated, nominal, direct, and consequential damages; avoidable consequences; counsel fees; certainty, compensation, damages for non-pecuniary injuries; value; interest; and damages in certain actions of tort and contract. Open to second- and third-year law students. Beale, Cases on Damages. M. W. 8:15. 2 units, 2d semester (CATHCART)

35. **Common Law Pleading.**—Common law actions; parties; the declaration; demurrers; traverses; confession and avoidance; duplicity; departure; new assignment; motions based upon the pleadings. Open to second- and third-year law students. This course will be given during the first two-thirds of the semester. Ames, Cases on Pleading; also selected cases. M. W. Th. 11:15.

2 units, 1st semester (CATHCART)

36. **Equity Pleading.**—The suit in equity; parties; the form and requisites of the bill; pleas; the answer; exceptions to answer; the replication. Prerequisite: course 35. This course will be given during the last third of the semester, following course 34. Thompson, Cases on Equity Pleading and Practice. M. W. Th. 11:15.

1 unit, 1st semester (CATHCART)

37. **Code Pleading.**—Historical development of the reformed procedure; the single civil action; parties; the complaint; the answer; the reply; motions and demurrers. Prerequisites: courses 35 and 36. Hinton, Cases on Code Pleading; also selected California cases. T. Th. 11:15. 2 units, 2d semester (CATHCART)

38. **Evidence.**—Respective functions of judge and jury; "law and fact"; presumptions; burden of proof; judicial notice; classification of evidence; relevancy as primary test of admissibility; principles and rules relating to the following: misleading or unimportant matters, character, admissions, confessions, hearsay, witnesses' opinions and expert testimony, real evidence, evidence relating to execution, contents and interpretation of writings; various rules of substantive law stated in terms of "parol evidence rule"; competency of witnesses; privilege of witnesses; impeachment and confirmation of witnesses; examination of witnesses. A few extra sessions will be held for the purpose of affording actual practice in the presentation of evidence and the

examination of witnesses. Open to third-year law students only. Thayer, Cases on Evidence (2d ed.); also selected cases. Daily, 8:15.
5 units, 1st semester (Hohfeld)

39. California Practice.—Organization and jurisdiction of courts; court records and files; proceedings prior to judgment, including: service and return of summons and motions relating thereto, appearances, provisional remedies, such as attachment, arrest, etc., lis pendens, the trial, exceptions and findings, verdict; the judgment, its entry and satisfaction; proceedings subsequent to judgment, including: stay of execution, costs, execution, motion for new trial, appellate proceedings; probate and administration proceedings; special proceedings, including writs of certiorari, mandamus, and prohibition; introduction to jurisdiction and procedure of federal courts. Prerequisites: courses 35, 36, and 37. Open to third-year law students only. California Code of Civil Procedure; also selected California cases. S. 10-12.
2 units, both semesters (Partridge)

Special Lectures

In addition to the regular professional courses, a number of special lectures, most of them of a practical character, are given each year by experienced lawyers of the California bar.

Instruction in Practice

A special effort is made to impart to the student a thorough knowledge of the rules of procedure and practice, and to enable him to acquire a creditable degree of skill and facility in the application of such rules to conditions of actual litigation. To these ends, courses are offered in Common Law, Equity and Code Pleading, and in California Practice. In the last-mentioned course, particularly, the student is afforded practical experience in the commencement of actions, the preparation of pleadings, the trial of issues of fact, and the argument of questions of law. Likewise, in connection with the course in Evidence, extra sessions of the class are held for the purpose of exemplifying the actual methods of introducing evidence and examining witnesses.

Moot Courts

Three law clubs—Bench and Bar, Abbott's Inn, and Arcade—have been organized by the students for the purpose of holding moot courts for the argument of questions of law. This work is voluntary, but is carried on with the advice and assistance of the Faculty.

Public Speaking

Courses in the principles of vocal expression, in public speaking, and in oral debate are offered by the University and may be elected by students in Law. Law students are eligible to membership in the two debating societies of the University. They may compete for the Carnot Debate medal, and for positions on the University Intercollegiate Debate team.

Admission to the Bar

It is provided by Section 280b of the California Code of Civil Procedure, that any person producing evidence of having satisfactorily completed the three years' course of law study prescribed by this University, shall be entitled to a license to practice law in all the courts of the State, subject to the right of the chief justice of the Supreme Court to order an examination, as in ordinary cases of applicants without such evidence. The certificate required by the statute will be issued, upon request, to any regular or special student who shall have received an aggregate of 81 unit-hours of credit in Law, including credit in all of the Pleading and Practice courses, numbers 35, 36, 37 and 39, and excluding credit in the course in Introduction to the Study of Law.

Tuition and Syllabus Fees

For professional law courses tuition fees are charged as follows: To students registering for thirteen or more units in law in any semester, twenty-five dollars per semester; to students registering for less than thirteen units in law in any semester, two dollars per unit per semester.

A syllabus fee of fifty cents per semester is charged in all law courses except California Practice. In California Practice the syllabus fee is three dollars. A diploma fee of five dollars is payable before graduation.

The cost of text books in the law courses will average twenty-five dollars per year for the three years of the professional course.

GRAPHIC ARTS

Arthur Bridgman Clark, Associate Professor.
Robert Bartholow Harshe, Assistant Professor.
Chloe Lesley Starks, Instructor.

The Department aims to meet the needs of three classes of students: students who wish training in artistic perception and graphic expression for its general culture value; students who wish to begin professional

art study while receiving other university training; and technical students to whom knowledge of representative drawing is essential.

Course 1 or its equivalent must precede all other courses excepting courses 6, 8, and 9. Courses 3, 4, 5, 11, and 12 may receive credit a second time when continued with sufficient skill.

For students making Graphic Arts their major study the following is an average programme: Elementary still life (3 to 5 units); Cast drawing (3 units); Landscape (3 units); Perspective (2 units). Total, 13 units the first year.

Design (4 units); Color (4 units); Head drawing or Landscape (5 units); Lectures (2 units). Total, 15 units the second year.

Journal Club, Teachers' course, and a continuation of Design, Handicraft, or Landscape, or Head and Illustration, or Color (the particular combination which is best fitted to the purposes of the particular student). Total, 20 units during the third and fourth years.

The Teacher's Recommendation.—The minimum requirement for the High School recommendation in Drawing is course 1, 2, 3 or 4, and 5 (3 units each), also 6, 10, and 11: total, 18 units.

1. Elementary Drawing.—Introductory course; still life in pencil, charcoal, and color. Open to all students. T. W. Th. F. 1:30-4:30.
2 to 4 units, either semester (Starks)

2. Drawing of the Head.—From the cast. Daily 1:30-4:30.
3 to 5 units, either semester (Harshe)

3. Drawing of the Head.—A continuation of course 2 from life. Open to second-year students. Daily 1:30-4:30.
3 to 5 units, either semester (Harshe)

4. Color.—Still-life painting in oils or water-colors. Open to students with six units of drawing. Daily 1:30-4:30.
2 to 5 units, either semester (Harshe)

5. Landscape.—Chiefly outdoor work; but supplemented during the colder weather of each semester by study from photographs and from plant forms with special attention to decorative composition and interpretation. The pen, pencil, charcoal or brush are used in accordance with the capacity and needs of each student. T. W. Th. 1:30-4:30.
3 units, either semester (Clark)

6. Lectures.—Ideals and processes in pictorial and applied art. Open to science students on advice. T. W. Th. F. 1:30-4:30.
2 units, 1st semester or both semesters (Clark)

7. Journal Club.—Required of third- and fourth-year students of the Department. Th. 4:30. 1 unit, 2d semester (Clark)

8. Scientific Perspective.—A series of problems involving the mathematical principles of perspective, and the application of these principles to actual buildings and objects. [Course 8 is given in alternate years; will not be offered in 1909-10.]

2 units, 2d semester (CLARK)

9. Science Drawing.—A course designed to assist students in scientific illustration. It includes the drawing of simple scientific subjects in pen outline, line and stipple shading, wash, and line and wash. Especial attention will be paid to the needs of individual students. Open to science students on advice. T. W. Th. F .1:30-4:30.

2 units, either semester (STARKS)

10. Teachers' Course.—For intending teachers of drawing. Open to advanced students only. [Given in alternate years; will be offered in 1909-10.] 2 units, 2d semester (CLARK)

11. Design.—Exercises in the principles of abstract design, decorative design, and structural design. Application of the principles to interior household fittings, and the handicrafts generally. T. Th. 10:15. 2 to 3 units, both semesters (CLARK)

12. Illustrating.—Practice in design and appreciation of the book arts, including title pages, book plates, borders, announcements, head and tail pieces, and illustrations. Must be preceded by course 3. Daily 1:30-4:30. 2 to 3 units, both semesters (HARSHE)

13. Handicraft.—Exercises in stencilling and block printing, wood carving, decorative metal work, etc. To follow course 11. Th. F. 1:30-4:30. 2 units, either semester (HARSHE)

MATHEMATICS

ROBERT EDGAR ALLARDICE, RUFUS LOT GREEN, Professors.
HANS FREDERIK BLICHFELDT, Associate Professor.

The courses in this department have been arranged to meet the wants of two classes of students—students whose major subject is Mathematics, and students who, while taking their major in some other department, desire to include some Mathematics in their course. Students in Engineering are provided for in the Department of Applied Mathematics.

For students whose major subject is Mathematics the following programme of work is recommended: In the first year, courses 3 and 4; in the second year, courses 9, and 10 or 21; in the third year, courses 11, 12, and 15; while the work during the fourth year and for

graduate students may be selected from the remaining courses, and from the Department of Applied Mathematics. The advanced courses will, for the most part, be given once in two or once in three years, and it is hoped that the advanced students will thus have the opportunity of studying the more important branches of modern mathematics.

Students whose major subject is Mathematics are recommended to begin the study of either French or of German in their freshman year.

Students who desire to take one or more years of Mathematics as a part of a liberal training are recommended to begin their work in this Department with one or more of the courses 1, 2, 3, 6, and 7.

The Teacher's Recommendation.—For the High School recommendation in Mathematics the following courses are required: 1, 2, 3, 4, 9, and 10 or 6.

1. Trigonometry.—Elementary course, with applications involving logarithmic calculation. T. Th. 9:15.
2 units, 1st semester (BLICHFELDT)

2. Solid Geometry.—Elementary course. T. Th. 9:15.
2 units, 2d semester (BLICHFELDT)

3. Algebra.—Fundamental laws, degree, symmetry, indeterminate coefficients, remainder theorems, factors, complex numbers, introduction to theory of equations, progressions, permutations and combinations. Presupposes entrance credit in Elementary Algebra. Daily 10:15. 5 units, 1st semester (GREEN)

4. Co-ordinate Geometry.—An elementary course in the analytic geometry of the conic sections, including the discussion of the general equation of the second degree. Presupposes course 3. Daily 10:15.
5 units, 2d semester (GREEN)

[Students making Mathematics their major subject should take courses 3 and 4 as the first year's work, and those who have not had Trigonometry should also take course 1.]

6. Plane Geometry.—This course includes a rapid revision of elementary geometry, together with additional theorems and references to modern theories. It is recommended to those who expect to teach mathematics, and presupposes entrance credit in plane geometry. T. Th. 9:15. 2 units, both semesters (ALLARDICE)

7. General Course.—An elementary course, including topics in algebra, trigonometry, co-ordinate geometry, and calculus. M. W. F. 9:15. 3 units, both semesters (BLICHFELDT)

9. Differential and Integral Calculus.—Lectures on the Differential and Integral Calculus, with applications to the theory of plane curves, on the lines of Williamson's treatises. M. W. F. 9:15.
3 units, both semesters (ALLARDICE)

10. Advanced Co-ordinate Geometry.—A continuation of course 4, including the elements of the Theory of Determinants. T. Th. 9:15.
2 units, both semesters (GREEN)

11. Advanced Calculus.—A continuation of course 9. M. W. F. 11:15. 3 units, 1st semester (ALLARDICE)

12. Theory of Functions.—Elementary course. M. W. F. 11:15.
3 units, 2d semester (ALLARDICE)

13. Non-Euclidean Geometry.—Presupposes a course in Calculus. T. Th. 11:15. 2 units, 2d semester (BLICHFELDT)

15. Differential Equations.—M. W. F. 10:15.
3 units, both semesters (BLICHFELDT)

16. Theory of Functions.—Advanced course. M. W. F. 2:30.
3 units, both semesters (ALLARDICE)

17. Theory of Curves.— 2 units, both semesters (ALLARDICE)

18. Insurance.—An introduction to the simpler parts of the Theory of Probabilities; the principles and problems of insurance; the mathematical principles involved in actuarial science, with practice in the computation and use of tables. M. W. F. 9:15.
3 units, 1st semester (GREEN)

19. Reading Course. In this course the students will read French and German text-books under the direction of the instructors. T. Th. 2:30. 2 units, both semesters (ALLARDICE, BLICHFELDT)

20. Theory of Groups.—[Not given in 1909-10.]
3 units, 2d semester (MANNING)

21. Projective Geometry.—T. Th. 11:15.
2 units, both semesters (ALLARDICE)

22. Theory of Numbers.—T. Th. 11:15.
2 units, 1st semester (BLICHFELDT)

APPLIED MATHEMATICS

Leander Miller Hoskins, Professor.
Halcott Cadwalader Moreno, Sidney Dean Townley, Associate Professors.
William Albert Manning, Assistant Professor.
Jesse Dwight Suter, Instructor.

Under Applied Mathematics are included the courses in mathematics which are required of students in Engineering. The aim is to make these courses practical in the sense of furnishing thorough drill on fundamental principles and much practice in their application. Emphasis is laid upon accuracy and system in the solution of numerical problems. Students whose training in arithmetical work has been deficient, or who are otherwise inadequately prepared, or who lack aptitude for mathematical study, cannot pursue these courses successfully.

Courses A and B are the equivalents of the corresponding entrance subjects (5 and 6), and are prerequisites to the regular first-year work.* Course 1 embraces the regular first-year work, and courses 2 and 3 the regular second-year work.

A. Solid Geometry.—This presupposes Plane Geometry, and is not required of those having entrance credit in Solid Geometry (subject 5). T. Th. 9:15. 2 units, 1st semester (Suter)

B. Trigonometry.—This is equivalent to entrance subject 6, and is not open to students having entrance credit in this subject. Plane Geometry is a prerequisite. (I, II) M. W. F. 10:15.
3 units, 2d semester (Suter)

1. First-year Mathematics.—This course embraces (*a*) Algebra, (*b*) Trigonometry, (*c*) Coördinate Geometry, approximately equal periods being given to the three subjects. The work begins with a rapid review of Elementary Algebra, intended to test the student's familiarity with fundamental principles and operations, those showing deficient preparation not being permitted to continue. This review is followed by more advanced work in Algebra, but emphasis is laid on the thorough mastery of the ordinary rules rather than on covering a large amount of ground. In the second part of the course much attention is paid to reviewing and enforcing the fundamental principles of Plane Trigonometry, and especially to the numerical solution of triangles using both natural and logarithmic functions; this is followed

* It is not intended to offer these courses permanently, but a year's notice will be given of their withdrawal.

by the elements of Spherical Trigonometry. In Coördinate Geometry it is aimed to familiarize the student with the methods of coördinates, so that he can apply it independently to simple problems, rather than to devote much attention to a detailed study of the properties of the conic sections or other curves. The course is open to students having entrance credit in Elementary Algebra, Plane and Solid Geometry, and Plane Trigonometry. (I, II, III) Daily, 8:15; (IV) Daily, 11:15.

5 units, both semesters (MANNING, SUTER)

2. Calculus.—An elementary course on Differential and Integral Calculus, in which emphasis is laid on fundamental principles and simple applications. (I, II, III) M. W. F. 9:15.

3 units, both semesters (MANNING, MORENO, TOWNLEY)

3. Theoretical Mechanics.—An elementary course, covering the fundamental principles of Statics, Kinematics, and Kinetics, restricted mainly to coplanar forces and to plane motion of particles and of rigid bodies. An elementary treatment of Graphic Statics is included. The course is designed as a preparation for the courses in Applied Mechanics taken by students of Engineering, but is open to all whose preparation includes the equivalent of course 1. Calculus must either precede this course or to be taken at the same time. (I, II, III) Daily, 10:15. 5 units, both semesters (HOSKINS, MORENO, TOWNLEY)

In addition to the foregoing, which are required of all students of Engineering, the following elective courses are offered:

4. Adjustment of Observations. Theory of the method of least squares, with applications. Credit in course 2 or its equivalent is a prerequisite. T. Th. 11:15. 2 units, 2d semester (TOWNLEY)

5. General Astronomy.—This course will consist of a general survey of the various branches of astronomy, including a study of the celestial sphere, the bodies of the solar system, comets, the fixed stars, and other heavenly bodies. The treatment will be essentially non-mathematical. M. W. F. 8:15. 3 units, 1st semester (TOWNLEY)

5a. Practical Astronomy. The theory and practice of the determination of latitude, azimuth, time, and longitude. Intended especially to meet the requirements of students of civil engineering. Trigonometry and surveying are prerequisites. M. W. F. 11:15.

3 units, 2d semester (TOWNLEY)

Additional courses in Practical Astronomy and in Geodesy may be arranged for students qualified to pursue them to advantage.

6. Graduate Courses.—Advanced courses in Theoretical Mechanics, Hydromechanics, Theory of the Potential Function, Theory of

Elasticity, or other subjects, may be arranged for students having the requisite mathematical training.

PHYSICS

Fernando Sanford, Professor.
Frederick John Rogers, Associate Professor.
Elmer Reginald Drew, Joseph Grant Brown, Assistant Professors.

Courses 1, 2, 3, 4, and 5 constitute a course in General Physics, and are intended to precede the advanced courses.

1. Dynamics.—Including hydrostatics and pneumatics. Open only to students who have had Algebra and Plane Geometry. Required as a preparation for each of the courses following (except 6 and 7). One lecture and two laboratory periods per week. Lec. W. 1:30; Lab. (I) T. Th. 9:15-12:15, (II) Th. F. 1:30-4:30.

3 units, either semester (Brown)

2. Electricity and Magnetism.—One lecture and two or three laboratory periods per week. Prerequisite: course 1, or its equivalent. Lec. F. 1:30; Lab. W. Th. F. 1:30-4:30.

3 or 4 units, 2d semester (Drew)

3. Heat.—One lecture and two laboratory periods per week. Prerequisite: course 1. Lec. T. 10:15; Lab. M. T. 1:30-4:30.

3 units, 2d semester (Sanford)

4. Sound.—Including wave-motion. One lecture and two laboratory periods per week. Prerequisite: course 1, and Trigonometry. Lab. M. T. 1:30-4:30; Lec. to be arranged.

3 units, 1st semester (Brown)

5. Elementary Optics.—Three laboratory periods per week. Prerequisites: course 1, and Trigonometry. W. Th. F. 1:30-4:30.

3 units, 1st semester (Sanford)

6. Engineering Physics.—Intended especially for students in Mechanical and Electrical Engineering. Three experimental lectures and recitations and one laboratory period per week. Prerequisite: entrance Physics, and course 3 in Applied Mathematics, or may be taken concurrently with Theoretical Mechanics.

a. Heat, Light and Sound. Lec. M. W. F. 11:15; Lab. M. or T. or F. 1:30-4:30. 4 units, 1st semester (Drew)

b. Electricity and Magnetism. Lec. M. W. F. 11:15; Lab. M. or T. 1:30-4:30. 4 units, 2d semester (Rogers)

7. Physics for Students of Biology.—A general, non-mathematical course in Physics intended especially for students in Biological Science and students preparing for the study of Medicine. Two lectures and two laboratory periods per week throughout the year. Lec. M. W. 10:15; Lab. M. T. 1:30-4:30.

4 units, both semesters (SANFORD)

8. Mechanical Measurements.—A course in exact measurements of mass, length, time, and gravity, using balance, dividing engine, cathetometer, chronograph, etc. Two laboratory periods per week. Prerequisite: course 1. M. T. 1:30-4:30.

2 units, 2d semester (BROWN)

9. Electrical Measurements.—Open to students who have taken course 2 or course 6*b*. Lec. Th. 8:15; Lab. M. T. W. 1:30-4:30.

4 units, 1st semester (ROGERS)

10. Advanced Optics.—Two laboratory periods per week. Prerequisite: course 5. M. T. 1:30-4:30.

2 units, 2d semester (SANFORD)

11. General Physics.—Lectures. Prerequisites: courses 1, 2, 3, 4, and 5, or their equivalent. M. T. Th. F. 11:15. [Probably will not be given in 1909-10.] 4 units, both semesters (SANFORD)

12. Analytic Mechanics.—Lectures. Prerequisites: course 1 and the Differential and Integral Calculus.

4 units, 2d semester (DREW)

13. Teachers' Course in Elementary Physics.—Prerequisites: courses 1, 2, 3, 4, and 5, or their equivalent. F. 10:15.

1 unit, both semesters (SANFORD)

14. General Thermodynamics.—Prerequisites: Calculus and course 3, or its equivalent. 3 units, 1st semester (DREW)

15. Vibratory Motion. Recitations and lectures illustrated by occasional lecture experiments and a few carefully executed laboratory experiments. A knowledge of Differential and Integral Calculus is required. T. W. F. 8:15. 3 units, 1st semester (ROGERS)

16. The Kinetic Theory of Gases.—Prerequisites: Calculus, and course 3 or its equivalent. 2 units, 2d semester (ROGERS)

17. History of Physics.—Lectures and readings on the history of physical science with special reference to the development of theories. Prerequisites: courses 1, 2, 3, 4, and 5.

2 units, 2d semester (ROGERS)

18. Electrical Theory.—Prerequisites: course 2 or 6*b*, and Calculus. M. W. F. 11:15. 3 units, 1st semester (DREW)

19. Investigation of Original Problems in the Laboratory.—Hours to be determined in each case. (SANFORD)

20. The Election Theory.—One lecture per week. Hours to be determined.

The Teacher's Recommendation.—The minimum requirement is courses 1, 2, 3, 4, 5, or an equivalent, and course 13.

Laboratory Fees.—Courses 1, 2, 3, 4, 5, 7, and 8, $4 each, per semester; courses 6*a*, and 6*b*, $3 each, per semester; course 9, $5 per semester; course 19, $2 per unit per semester.

CHEMISTRY

JOHN MAXSON STILLMAN, LIONEL REMOND LENOX, EDWARD CURTIS FRANKLIN, STEWART WOODFORD YOUNG, Professors.

ROBERT ECKLES SWAIN,* Associate Professor.

JOHN PEARCE MITCHELL, Assistant Professor.

WILLIAM HENRY SLOAN, WILLIAM GEORGE BATEMAN, GEORGE DEFOREST BARNETT, Instructors.

FRED FINLEY FITZGERALD, Acting Instructor.

[MANUEL BENJAMIN BAIROS, FORREST BAKER BEYER, GEORGE SHAMBAUGH BOHART, ALEXANDER M. CUTHBERTSON, ROBERT W. POINDEXTER, JR., EDWARD WALDO RICE, ERNEST H. STABER, Assistants (1908-09).]

I. LECTURE COURSES

1. General Inorganic Chemistry.—Comprising a systematic treatment of elementary principles and of the properties of the more important elements and their compounds. Open to all students. Those not having entrance credit in Chemistry will register in a three-hour section for the first semester and in laboratory course *a*. (I) M. W. F. 8:15; (II) T. Th. 11:15.

2 or 3 units, 1st semester; 2 units, 2d semester (MITCHELL)

2. Principles of General and Inorganic Chemistry.—Discussion of the elements of chemical theories and of important generalizations in the field of inorganic chemistry. Open to all students who have completed courses 1 and *a*II. M. W. F. 11:15.

3 units, both semesters (STILLMAN)

* Absent on leave, 1909-10.

3. Organic Chemistry.—Lectures and reviews on the chemistry of carbon compounds. Open to students who have completed courses 1 and *a*. T. Th. 10:15. 2 units, both semesters. (FRANKLIN)

[A condensed course in organic chemistry is offered for students in medicine. See course 8 in the Department of Medicine.]

4. Industrial Chemistry.—Lectures on fuels, water, acid and alkali manufacturing, explosives, sugar-making and refining, petroleum. Lectures in this course are also given by Professor FRANKLIN (Dyes). Open to students who have completed courses 2 and 3; or may be taken concurrently with course 3. M. F. 9:15.

2 units, both semesters (STILLMAN)

5. History of Chemistry.—Open to students who have completed courses 2 and 3. [Given in 1909-10.]

2 units, 1st semester, in alternate years (STILLMAN)

6. Qualitative Analysis.—In connection with laboratory course *b*. T. 1:30. 1 unit, either semester (LENOX)

7. Advanced Organic Chemistry.—Advanced topics in organic chemistry, including stereochemistry. Open to students who have completed courses 2 and 3. [Not given in 1909-10.]

2 units, both semesters, in alternate years (FRANKLIN)

8. General Physical Chemistry.—Lectures covering as far as possible the whole field of physical chemistry. Open to students who have completed courses 2 and *d* in Chemistry, courses 4 and 9 in Mathematics, and course 1 in Physics (course 2 being also recommended). M. W. F. 8:15. 3 units, both semesters (YOUNG)

9. Physical-Chemical Measurements.—An informal course of lectures given as needed in connection with course *f*.

No credit (YOUNG)

10. Theories of Analytical Chemistry.—T. 3:30.

1 unit, 2d semester (YOUNG)

11. Physiological Chemistry. Lectures on the chemical composition and action of the tissues and secretions of the animal body, the digestion of foods, and the elimination of waste products. Open to students who have completed course 3, and Physiology 1 or its equivalent. [Not given in 1909-10.] 3 units, 1st semester (SWAIN)

12. Seminary in Chemistry.—Discussion of assigned topics in theoretical and general chemistry. Open to graduate students, and to advanced undergraduates in Chemistry, with the approval of the Faculty in Chemistry. W. 4-5. 1 unit, both semesters

II. Laboratory Courses

a. General Inorganic Chemistry.—In connection with course 1.

a I. Illustrating fundamental laws and principles of elementary chemistry, for students who have not received entrance credit in Chemistry. M. T. or Th. F. 1:30-4:30.

2 units, 1st semester (Mitchell, Barnett)

a II. Inorganic preparations and general chemistry. For students who either have completed *a* I or have received entrance credit in Chemistry. M. T. or Th. F. 1:30-4:30

2 units, either semester (Mitchell, Barnett)

b. Qualitative Analysis.—Open to students who have completed courses 1 and *a* II.

3 afternoons, either semester (Lenox, Bateman)

c. Preparation of Typical Carbon Compounds.—Open in connection with course 3 to students who have completed course *b*.

3 afternoons, either semester (Franklin)

d. Quantitative Analysis.—Training in manipulation in gravimetric and volumetric methods. Work begins either semester. Students in other departments than Chemistry may register for three afternoons if they cannot arrange for four, as is recommended. Open to students who have completed courses 6 and *b*. Lec. T. 1:30; Lab. by arrangement. 4 afternoons, either semester (Stillman, Sloan)

e. Mineral Analysis.—Systematic analysis of representative minerals. Open to students who have completed course *d*, and required of students whose major subject is Chemistry, unless *f* or *g* be elected instead.

4 afternoons, either semester (Stillman, Lenox, Sloan)

f. Physical-Chemical Measurements.—Exercises in the practice of physical-chemical laboratory methods. Open to students who have completed or are taking course 8, and who have completed course *d*.

3 or 5 units, either semester* (Young)

g. Physiological Chemistry.—A laboratory course including a preliminary study of the proteids, carbohydrates, and fats, and the action of the various digestive fluids upon them, followed by a chemical examination of the bile, blood, milk, the chief tissues of the animal body, and the excretions. In connection with course 11. [Not given in 1909-10.] 3 afternoons, 1st semester (Swain)

h. Assaying.—Open to students who have completed course *d*. Lec. M. 1:30; Lab. by arrangement.

3 afternoons, either semester (Lenox)

x. Advanced and Special Courses in laboratory work and research work are open to students who have completed necessary prerequisites, by arrangement with professors of the Department and with reference to the particular aims and ambitions of the students. Such advanced or special subjects are, for example, special methods in mineral analysis, iron and steel analysis; special methods in assaying; water analysis; food analysis; urine analysis; elementary organic analysis; special organic preparations; analysis of sugar, toxicology, etc.

Qualified students may also pursue investigations of problems in inorganic, organic, physical, analytical, or physiological chemistry under the direction of any professor with whom arrangement is made.

For all such advanced, special, or research work, students will register and enroll under *x*, giving name of professor under whom the work is to be carried on, and for such number of units of credit as may be agreed upon.

Candidates for the degree of Bachelor of Arts in Chemistry may select any one of the four following courses (A, B, C, D), the requirements of the Department being as follows:

A. General Chemistry

First Year:—Chemistry 1, *a;* Physics 1; Mathematics 3; German 1.
Second Year:—Chemistry 2, 6, *b;* Mathematics 9; German 2*a*.
Third and Fourth Years:—Chemistry *d*, 3, *c*, 8, *f*.

Course A is recommended for all who are studying the science of chemistry for its own sake or for the profession of teaching.

B. Analytical Chemistry

First Year:—Chemistry 1, *a;* Physics 1; German 1.
Second Year:—Chemistry 2, 6, *b;* Geology 1, 2; German 2*a*.
Third and Fourth Years:—Chemistry *d*, *e*, *c*, *h*, 3, 10; Geology 5.

Course B is particularly adapted to students who are looking forward to the career of analytical chemist and assayer.

C. Medical or Sanitary Chemistry

First Year:—Chemistry 1, *a;* Physiology 1; German 1.
Second Year:—Chemistry 2, 6, *b;* Physics 1; German 2*a*.
Third and Fourth Years:—Chemistry 3, *c*, *d*, 11, *g*.

Course C is particularly adapted to students who are looking forward to medical education or to sanitary chemistry.

D. Chemical Engineering

This course comprises four years of the necessary five years' work leading to the advanced degree of *Engineer* in Chemical Engineering.

Candidates in this course receive the degree of A. B. in Chemistry upon completion of the following requirements:

First Year:—Chemistry 1, *a;* Applied Mathematics A, B, 1; German 1.

Second Year:—Chemistry 2, 6, *b, d;* Applied Mathematics 2, 3.

Third Year:—Chemistry 3, *c;* Engineering 1*a,* 1*b,* 2; Physics 1, 2 (or 6*a* and 6*b*); German 2*a.*

Fourth Year:—Chemistry 4, *e* (or *h*); Mechanical Engineering 11, 13; Geology 11*c;* Engineering 3*a.*

Course D is intended particularly for students who are working toward the degree of Chemical Engineer and who desire to fit themselves for positions of responsibility in connection with the administration of industries involving chemical knowledge and skill.

Advanced Degrees

Applicants for the degree of *Master of Arts* in Chemistry will be expected to complete, in addition to the requirements for the bachelor's degree, the equivalent of thirty units' work in the University—of which approximately two-thirds must be in the Department. This work will include a thesis based on laboratory work, and chemistry 8 and *f,* if not included in the undergraduate work.

Candidates for the advanced degree of *Engineer* in Chemical Engineering will be required to complete, in addition to the requirements for the A. B. degree specified under course D: Mechanical Engineering 14, 31 (first semester of the course), 24, 36 (3 units per week for one semester), Chemistry 8, and a thesis based on laboratory work. Electrical Engineering 1 is advised, if possible, though not required. It is estimated that these requirements may be completed in one year after the completion of the requirements under Course D.

Candidates for the degree of *Doctor of Philosophy* in Chemistry, after the completion of the equivalent of the requirements for Master of Arts or Engineer, will follow such courses as are approved by the Department faculty, subject to general University regulations.

The Teacher's Recommendation.—The minimum requirement for the high school teacher's recommendation in Chemistry is courses 1 and *a* (Elementary and General Inorganic, lectures and laboratory), the first half of course 2 (Principles of Chemistry), and either the second half of course 2, or courses 6 and *b* (Qualitative Analysis, lectures and laboratory).

Laboratory Fees.—A charge of twenty-five dollars per semester will be made to students in each laboratory course of not more than four

units registration. Of this charge five dollars per semester in assaying, and ten dollars per semester in the other courses, is returnable, less bills for breakage and loss of apparatus.

BOTANY

Douglas Houghton Campbell, Professor
George James Peirce, Associate Professor.
Leonas Lancelot Burlingame, Assistant Professor.

1. Elementary Botany.—Study of representatives of the principal groups of plants, with lectures upon special morphology and classification. (Campbell's University Text-book of Botany.) Lec. W. 1:30; Lab. M. T. or Th. F. 1:30-4:30.

[Short botanical excursions will be made on six Saturday mornings in each semester. Attendance on these is not required, but is desirable, and will yield an additional half credit.]

3 or 3½ units, both semesters (Campbell, Peirce, Burlingame)

2. Algæ.—Lectures, reading, and laboratory work upon the special morphology and classification of the Algae. 1:30-4:30, by arrangement. 5 units, 1st semester (Campbell)

3. Archegoniatæ.—Special morphology and classification of the Archegoniatae. Continuation of course 2. 1:30-4:30, by arrangement. 5 units, 2d semester (Campbell)

4. Archegoniatæ.—Advanced work in special groups. 1:30-4:30, by arrangement. 1st and 2d semesters (Campbell)

5. Physiology.—Laboratory work, lectures, and reading on Nutrition and Respiration. (An elementary knowledge of Physics and Chemistry is a desirable preliminary to this course.) Lec. W. 2:30; Lab. M. T. 1:30-4:30. 3 units, 1st semester (Peirce)

6. Elementary Bacteriology.—Laboratory work, lectures, and reading. Lec. W. 2:30; Lab. Th. F. 1:30-4:30. [Not to be given in 1909-10.] 3 units, 2d semester (Peirce)

7. The General Physiology of Plants.—Lectures. Open to all. Th. 1:30. 1 unit, 1st semester (Peirce)

8. The Evolution of Plant Forms.—Lectures. Open to all except first-year students. Th. 1:30. 1 unit, 2d semester (Campbell)

9. Physiology.—Laboratory work, lectures, and reading on Growth, Irritability, and Reproduction. (An elementary knowledge of

Physics and Chemistry is a desirable preliminary to this course.) Lec. W. 1:30; Lab. M. T. 1:30-4:30.

3 units, 2d semester (PEIRCE)

10. Botanical Technique.—Lectures and laboratory work on methods of preparation and study of plant material. Lec. M. 8:15; Lab. by arrangement. 3 units, 1st semester (BURLINGAME)

11. Cytology.—Lectures and laboratory work on the plant cell; the bearings of cytology on evolution, plant breeding, etc. (Open only to those who have had courses 1 and 10; courses 2 and 3 are desirable preliminaries). Lec. M. 8:15; Lab. by arrangement.

3 units, 1st semester (BURLINGAME)

12. Advanced Work in Morphology and Physiology.—Intended especially for graduate students. (CAMPBELL, PEIRCE)

Course 1 must precede all other courses, except courses 7 and 8. Students making the subject a major must complete thirty-five units, including courses 1 to 3 and course 5, course 2 or course 3 in Systematic Botany, and also course 1 in Zoology, before graduation. Course 12 is intended especially for graduate students, and opportunities will be given such students for carrying on special lines of work upon original problems.

The Teacher's Recommendation.—The minimum requirement is course 1 and two additional courses.

Laboratory Fees.—Two dollars and a half for course 1; ten dollars for course 6; five dollars for courses 5 and 9; three dollars per semester for each of the other laboratory courses.

SYSTEMATIC BOTANY

WILLIAM RUSSELL DUDLEY, Professor.
LEROY ABRAMS, Assistant Professor.

Instruction in this Department chiefly relates to the Spermaphytes, their structure, affinities, and geographic distribution. The advanced work on the Fungi will also be given under its direction. Course 1, or its equivalent, and the Algæ and Archegoniatæ in General Botany, course 1 in Zoology, and course 1 in Entomology are required of students intending to graduate with Systematic Botany as a major study. Students are strongly advised to take one or more courses in Physiology by Professor PEIRCE.

1. Spermaphyta.—An elementary course in the morphology, histology, and affinities of the principal orders of flowering plants repre-

sented on the Pacific Slope. The laboratory work will be supplemented during the latter part of the course by field work and classification. Lec. T. 11:15; Lab. T. W. 1:30-4:30.

3 units, both semesters (Abrams)

2. Geographical Distribution and Forest Botany.—Lectures on the orders containing trees and shrubs and on the principles of geographical distribution which they illustrate. Laboratory work, also preparation of herbarium specimens of woody plants, native and exotic. Lec. Th. 11:15; Lab. T. W. Th. 8:15-4:30, by arrangement.

3 units, 2d semester (Dudley)

3. Fungi.—The laboratory work (three hours) will be devoted to morphology, development, and culture methods; the lectures to systematic relationships, with an account of economically important forms. Lec. Th. 11:15; Lab. T. W. Th. 8:15-4:30, by arrangement.

4 units, 1st semester (Dudley)

4. Elementary Taxonomy.—This course consists of field and laboratory work, with special reference to the collection and determination of flowering plants. Lab. T. W. Th. 8:15-4:30, by arrangement.

2 or more units, 2d semester (Abrams)

5. The Compositæ.—A study of representatives of the tribes of Compositæ, with reference to the general principles of classification. T. W. Th. 8:15-4:30, by arrangement.

2 units, 1st semester (Abrams)

Advanced Courses

6. Advanced Fungi.—The investigation of some group of fungi, which may be either a taxonomic or a biological study. T. W. Th. 8:15-4:30, by arrangement.

2 or more units, either semester (Dudley)

7. Coniferæ.—A study of the Coniferæ, dealing especially with the classification and distribution of the North American species and regional distribution in other parts of the world. T. W. Th. 8:15-4:30, by arrangement. 2 units, 1st semester (Dudley)

8. Phytogeography. This course is intended for those students who wish to pursue further the studies undertaken in course 2. It will consist of laboratory, herbarium, and field studies of the trees and shrubs, with reference to their local distribution. T. W. Th. 8:15-4:30, by arrangement.

2 or more units, either semester (Dudley, Abrams)

9. Special Taxonomy.—A critical study of some family or genus, with special reference to nomenclature and the methods of investigation. The laboratory and herbarium work will be supplemented by field work. T. W. Th. 8:15-4:30, by arrangement.

2 or more units, either semester (Dudley, Abrams)

10. Graduate Work.—This includes investigation on a special subject in the Spermaphyta or Fungi, which may be either a systematic or a biological study. It is supplemented by reading, and a study of methods in bibliography. (Dudley, Abrams)

Several carefully planned excursions in the second semester, through the plant formations in the adjacent mountains, are made the subjects of written reports by the students in course 2. Similar excursions are required in course 3.

The Herbarium consists largely of plants collected in Western America, and includes, besides purchases, considerable donations from the National Herbarium, the California Academy of Sciences, J. W. Congdon of Mariposa, and others. The considerable private collections of flowering plants and fungi belonging to the head of the Department are in constant use.

Laboratory Fees.—Laboratory fees for courses 1 and 3, three dollars; for the other courses, two dollars.

Courses Leading to Forestry

No instruction in technical forestry is given in the University; but a growing demand has led the Department to lay down courses for individual students in harmony with the preparatory requirements of the best forestry schools. Systematic Botany is made the major subject, with plant physiology and advanced work in the forest botany of the Pacific-Rocky Mountain region substituted for the algæ and archigoniatæ. Collateral study in Entomology is required, together with certain courses in Zoology, Geology, Mathematics, and other departments, and a reading knowledge of French and German. At the end of four years students have the advantage of a knowledge of Western plants, plant-formations, and climatic conditions in the most important field for applied American forestry, and a better scientific basis for their technical studies than is usually possessed by those pursuing work in the forestry schools.

PHYSIOLOGY AND HISTOLOGY

Oliver Peebles Jenkins, Frank Mace McFarland, Professors.
James Rollin Slonaker, Clara S. Stoltenberg, Assistant Professors.
[Frank Walter Weymouth, John Floyd Pruett, Assistants (1908-09).]

Undergraduate Courses

1. General Anatomy and Physiology.—This course is designed to give a general view of the laws of the structure and the activity of organisms. The work will give occasion to discuss many questions of General Biology. It consists of: First, the study of the cell and its activities as shown in the unicellular organisms, in reproductive cells, and in individual cells of many tissues; second, the study of the laws and course of development resulting in higher differentiations in structure, and specializations in function, exhibited in a selected series of organisms, both animals and plants, of increasing complexity; third, the comparative study of the physiological processes of forms placed under widely different conditions. The latter part of the course is occupied with an introduction to the embryology, anatomy, and physiology of vertebrates. (One lecture and five laboratory hours a week.) Lec. M. 3:30, Lab. M. T. 1:30-4:30.

3 units, both semesters (Jenkins, Slonaker)

2. Physiology of Muscle, Blood, and Circulation.—To be preceded by course 1. An experimental course covering the ground represented in Foster's Physiology, Part I, or Howell's Text-book on the same subjects. (One lecture and five laboratory hours per week.) Lec. Th. 9:15, Lab. Th. F. 1:30-4:00.

3 units, 1st semester (Slonaker)

3. Physiology of Digestion, Respiration, Elimination of Wastes, Metabolism, and Nutrition. Planned to follow course 2. An experimental course, with Foster's Physiology, Part II, and Howell's Text-book, as texts. (One lecture and five laboratory hours per week.) Lec. Th. 9:15, Lab. Th. F. 1:30-4:00.

3 units, 2d semester (Slonaker)

4. Structure of the Nervous System.—The course consists of the dissection and comparative study of a series of vertebrate brains, including the human brain and cord; abundant material is provided, also such necessary helps as the latest models and charts. For texts the student will use Quain, Edinger, and Barker. (One lecture and six laboratory hours per week.) Lec. F. 8:15, Lab. Th. F. 1:30-4:30.

3 units, 1st semester (Stoltenberg)

5. Anatomy and Histology of the Sense Organs.—It is planned to supplement course 4, the two being designed to give the gross and minute anatomy of the central nervous system and sense organs. The texts necessary for the student's use are Quain and Barker. (One lecture and five laboratory hours per week.) Lec. F. 8:15, Lab. Th. F. 1:30-4:00. 3 units, 2d semester (STOLTENBERG)

6. Physiology of the Nervous System and Sense Organs.—An experimental course in these subjects, requiring courses 4 and 5 as preliminary. Texts: Foster, Howell's Text-book. (One lecture and five laboratory hours per week.) Lec. M. 10:15, Lab. Th. F. 1:30-4:00. 3 units, 1st semester (JENKINS)

7. The Vertebrate Eye.—A comparative study of the structure and physiology of the eyes of vertebrates, giving special attention to the retina. Open to advanced students. (Lecture and laboratory work, six hours per week.) 10:15 by arrangement. 2 units, 2d semester (SLONAKER)

8. Special Courses in Physiology.—Advanced courses open only to those who have had courses 1, 2, 3, 4, 5, and 6. They are arranged for the advanced study of selected subjects in physiology, or as a drill in the methods of research. The work will be planned for the individual student, the time varying with the exigencies of the case. 1:30-4:30 by arrangement. 2 to 5 units, both semesters (JENKINS)

9. Histology.—The study of the structure of the cell and its general phenomena, the fundamental tissues and the outline of their development in a comparative way, occupy the first semester. In the second, the microscopic anatomy of organs, except those of the nervous system and special senses [see courses 4 and 5], is dealt with. Elementary histological technique is taught during the course. Prerequisite: course 1, or its equivalent. Physiology majors are advised to take courses 2, 3, and 9 together. (One lecture and six laboratory hours per week.) Lec. T. 8:15, Lab. T. Th. 9:15-12:15. 3 units, both semesters (MCFARLAND)

10. Histogenesis.—A course in advanced Histology for students who have completed courses 1 and 9, and in addition the first semester of Vertebrate Embryology (Zoology 10). It comprises the comparative study of the histogenesis of the fundamental vertebrate tissues and organs. (One lecture per week, minimum laboratory work six hours per week.) Lab. W. Th. F. 1:30-4:30. 3 units, 1st semester (MCFARLAND)

11. Neurocytology.—A comparative study of the minute structure of the nerve cell and nerve fibre, the neurone theory, and the question of

functional alterations of structure during normal activity and artificial stimulation. (One lecture and at least six laboratory hours per week.) Open to advanced students.

3 to 5 units, 2d semester, in alternate years (McFarland)

12. Cellular Biology.—A course in Cytology dealing with the structure and functions of the cell, with special reference to the reproductive processes in unicellular and multicellular organisms, and the theories connected therewith. Open to advanced students. (Two lectures per week, with demonstrations and laboratory work.) [Not to be given in 1909-10.]

3 to 5 units, 2d semester, in alternate years (McFarland)

13. Anatomy.—This course consists of twelve weeks' study of human osteology, with a brief comparative study of skeletons of vertebrates. The remaining six weeks is given to mammalian myology, angiology, and splanchnology (dog, cat, rabbit). [For anatomy of nervous system and sense organs, see courses 4 and 5.] Lab. T. W. 1:30-4:30. 2 to 5 units, 2d semester (Stoltenberg)

14. Special Courses in Histology.—Advanced courses in Histology, Cytology, and Microscopic Anatomy will be arranged for individual students, with a view to giving drill in methods of research. Open only to those who have had courses 1, 5, and 9. 11:15 by arrangement. 2 to 5 units, both semesters (McFarland)

15. Journal Club.—Students in the advanced classes will be expected to meet once a week to discuss current literature in Physiology and Histology. M. 8:15. 1 unit, both semesters.

16. Seminary in Physiology and Histology.—Open to graduate students. W. 4:00. 2 units, both semesters.

17. Research in Physiology or Histology.—By arrangement. (Jenkins, McFarland, Slonaker, Stoltenberg)

Candidates for the Bachelor's degree who select Physiology and Histology as a major will be expected to take courses 1, 2, 3, 4, 5, 6, 9, and 15, and at least five units to be made up from the other courses offered in the Departments of Physiology or Anatomy; and in addition courses 1 and *a* in Chemistry, one year in Physics (see Course 7), and the first semester in Embryology (course 10 in Zoology). Candidates for the degree of M. D. will also include Chemistry.

Laboratory Unit of Credit.—In those courses in which definite laboratory time is not fixed, three hours of laboratory work per week through one semester are taken as the equivalent of one unit of credit.

The Teacher's Recommendation.—Students who wish the Department recommendation for High School teaching in Physiology are expected to complete the first two years' work (courses 1, 2, 3, and 9).

Laboratory Fees.—Seven dollars per semester, except for course 1, in which the fee is five dollars per semester.

Graduate Courses

The graduate work of the Department is included in the courses numbered 7, 8, 10, 11, 12, 14, 15, 16, and 17. Undergraduate students may elect such of these courses as they are prepared to take, but credit recorded in undergraduate standing will not count toward a higher degree. The details of the work of a graduate student will be planned for each individual, and will naturally depend on the aim sought by him and upon his previous training. Candidates for the higher degrees will be expected to include in their work attendance on the Journal Club and Seminary, the selection of certain of the courses given above, and the accomplishment of some research. When it is desired to select a minor subject, the choice of such minor will be guided by the needs of the candidate. The work leading to these degrees is of such a nature as to require a reading knowledge of German and French for its accomplishment.

Preparation for the Study of Medicine

Students intending to enter on the study of Medicine are advised to take Physiology and Histology as a major subject, with Chemistry, Physics, Anatomy, and Hygiene among the collateral subjects. Such a course gives that foundation both in scientific knowledge and in skill in experimental Physiology, and in Histological and Anatomical technique, which will make it possible to accomplish the medical course of the best medical schools with greater advantage. The courses required for graduation in the Department of Physiology and Histology with the degree of A. B. include the premedical requirements and the work of the first year of the Medical Department of Leland Stanford Junior University. For details of requirements for students intending to register in the Department of Medicine see the announcement of that department.

HYGIENE

William Freeman Snow, Associate Professor.
Royce Reed Long, Instructor.
Florence Bolton, Vera Townsend, Acting Instructors.
William Ramsay Dows Randall, H. W. Maloney, Edward W. Moulton, Assistants.
[John Frye Chapman, Harold Arthur Gilman, Frank Howard Hilton, Eugene Garrison McCann, Archibald Forbes Meston, Clyde T. Wetmore, John Henry Wiggins, Gymnasium Assistants (1908-09).]

General Education Courses

The following courses are useful to the major students of all departments by affording them an opportunity to learn the practical application of science to the requirements of personal and public health. The regular work of the Department is given below under "Department Courses."

1. Personal Hygiene.—Demonstrations, and three exercise hours per week in the gymnasium and its open-air divisions. Open to all students. Registration may be repeated each semester, but each student must show steady progress toward his highest physical efficiency. General strength, skill, and endurance tests must be passed before work is permitted in the various team and personal contest games.

1 unit, each semester

(Encina Gymnasium, Long; Roble Gymnasium, Townsend)

2. Public Health.—Lectures on the principles of public and industrial hygiene, and quarantine methods. The course includes required trips to the federal and municipal health departments in the vicinity of the San Francisco harbor, to various hospitals, and to laboratories for the preparation of vaccines and serums. Each student must enroll in a demonstration section. Not open to first-year students.

2 units, either semester (Snow, Long)

Department Courses

3. Industrial Hygiene.—A study of the effects of occupation on the health of individuals employed in the representative industries, trades, and professions. Occasional lectures, reading, and individual inspection work. A number of large industrial enterprises in the vicinity of San Francisco arrange annually for class inspection trips. Not open to first-year or second-year students.

3 units, 1st semester (Snow)

4. Physical Training Methods.—Open only to specially qualified students who wish to obtain the departmental recommendation for teachers of physical training. A progressive laboratory course is offered in the methods of examining students, and estimating their endurance and adaptability to various forms of exercise and sport. Regular practice is required in the application of the course to gymnasium instruction, athletic coaching and training, and the teaching of personal contest sports. One laboratory and two practice hours each week. Registration may be repeated by special arrangement with the instructors. 1 unit, each semester (Long, Bolton)

5. Epidemiology.—Each student is required to make a detailed study of a selected series of epidemics and of the vital statistics of assigned cities and States. The purpose of the course is to give the student practical experience in the use of epidemiological literature and methods of analysis. Open to students preparing for medicine or some phase of the public health service. Prerequisite: course 3.
3 units, 2d semester (Snow)

6a. Hygienic Laboratory Technique.—Training in the methods employed in Public Health Laboratories. Prerequisites: Hygiene 5, epidemiology; Chemistry 6, qualitative chemistry; Botany 6, bacteriology; Physiology 3. 3 units, 1st semester (Snow)

6b. Sanitary Survey.—Training in the methods of field inspection and sanitary charting employed by officers of the public health service. Prerequisite: Hygiene 6*a*. 3 units, 2d semester (Snow)

Preparation for the Teaching of Physical Training

A departmental recommendation will be given to students of exceptional ability who have acquired a thorough foundation in Physiology and have completed at least six units of work in Hygiene 4.

Preparation for the Public Health Service

A departmental recommendation will also be given to students desiring to qualify for the public health service as sanitary inspectors, statisticians, disinfectors, quarantine or laboratory assistants, when a sufficient amount of work has been completed to justify the recommendation.

The department does not accept major students, but the department courses have been arranged with reference to the premedical work of students who plan careers as health officers or sanitary experts.

Laboratory Fees.—Two dollars per semester for course 1; fifty cents per semester for course 2, and course 5; three dollars per semester for courses 6*a* and 6*b*.

ZOOLOGY

CHARLES HENRY GILBERT, HAROLD HEATH, Professors.
GEORGE CLINTON PRICE, Associate Professor.
JOHN OTTERBEIN SNYDER, EDWIN CHAPIN STARKS, WALTER KENRICK FISHER, Assistant Professors.

1. Elementary Zoology.—A laboratory course involving the study of representatives of the principal groups of animals, accompanied by lectures on their structure and classification, and on the general laws of biology which they illustrate. Lec. W. 2:30; Lab. Th. F. 1:30-4:30.
3 units, both semesters (PRICE)

2. The Invertebrates.—This course, following the first year's work, is designed to give the student a broader knowledge of the morphology and relationships of the more important invertebrate groups. Lec. by arrangement; Lab. M. T. 1:30-4:30.
3 units, both semesters (HEATH)

3. Invertebrate Embryology.—A study of segmentation, the formation of the germ layers, and certain phases of the later development, including the significance of larval forms and the relationships of the principal phyla. Must be preceded by courses 1 and 2. Th. F. 1:30-4:30.
2 units, both semesters (beginning 2d semester) (HEATH)

4. Advanced Work on Invertebrates.—The original investigation of problems connected with the anatomy and embryology of invertebrates. By arrangement. 2 to 5 units, both semesters (HEATH)

5. Microscopical Anatomy. A study of the fundamental animal tissues, with drill in microscopical technique. M. T. 1:30-4:30.
2 units, 1st semester (HEATH)

6. Classification of the Invertebrates.—A course designed to give a wider acquaintance with marine invertebrates; includes also consideration of geographical distribution, habits, and the collection and preservation of specimens. Must be preceded by course 1. M. T. W. 1:30-4:30.
3 units, both semesters (FISHER)

7. Special Systematic Work on Invertebrates.—Original investigation of problems connected with the classification of invertebrates. By arrangement. 2 or 3 units, both semesters (FISHER)

8. The Vertebrates.—A general course in the classification of vertebrate animals, with studies in the habits and the geographical distribution of species. The course will include field excursions and a study of the methods of collecting and preserving specimens. Lec. Th. 2:30; Lab. Th. F. 1:30-4:30. 2 units, both semesters (SNYDER)

9. Comparative Anatomy of the Vertebrates.—A more detailed examination of vertebrate morphology, including dissection of representatives of the several classes of vertebrates, with comparative studies in vertebrate osteology, the nervous and circulatory systems, etc. W. Th. F. 1:30-4:30. 3 units, both semesters (Snyder)

10. Vertebrate Embryology.—First semester: development of the chick through the first three days of incubation. Second semester: the early stages in the development of the salamander and the later stages in the development of the mammal. M. T. 1:30-4:30; Lec. M. 1:30. 2 units, both semesters (Price)

11. Fœtal Anatomy.—Later development of vertebrates, including such subjects as the metamorphosis of the circulatory and urogenital systems. The work will be devoted largely to the mammals. M. T. 1:30-4:30. 2 units, 2d semester (Price)

12. Ichthyology.—A course of lectures and laboratory work, including an examination of the larger groups of fishes with special reference to the characters on which they are based, and including practical work in the discrimination of species. M. T. W. 1:30-4:30. 2 units, both semesters (Gilbert, Starks)

13. Advanced Ichthyology.—Special problems in the morphology and classification of fishes will be set for advanced students prepared for such work. By arrangement.

2 to 5 units, both semesters (Gilbert)

14. Journal Club.—Open to seniors and graduate students. T. 4-6. 2 units, both semesters (Gilbert)

Major students must before graduation complete courses 1, 2, 9, 12, 14, the first semester of courses 3 and 10, one advanced course in Zoology, and course 1 in Botany.

Work for graduate and special students will be laid out in accordance with their individual needs and preferences.

The Teacher's Recommendation.—The Department recommendation for High School teaching in Zoology requires the completion of the following subjects: Elementary Zoology, 6 units; the Invertebrates, 6 units; the Vertebrates, 4 units; Comparative Anatomy of the Vertebrates, 6 units.

The Zoological Collections

The Zoological Museum contains a very full representation of the fishes of North America, and includes among others a valuable series of the deep-water fishes of the Pacific, and large collections from the West Indies, the Hawaiian Islands, Bering Sea, Japan, the coasts of

Mexico and Central America, and the Galapagos Islands. The museum contains also a large representation of the reptiles, batrachians, birds, and mammals of California and adjoining states. The collection of marine invertebrates is rich in Pacific echinoderms and crustacea, and contains a good working nucleus in the other principal groups. The series of deep-sea forms is especially valuable.

Laboratory Fees.—All laboratory courses, three dollars each per semester.

ENTOMOLOGY AND BIONOMICS

Vernon Lyman Kellogg, Professor.
Mary Isabel McCracken, Rennie Wilbur Doane, Assistant Professors.
Robert Earl Richardson, Instructor.
David Starr Jordan, Lecturer.

ENTOMOLOGY

1. Elementary Entomology.—The elementary study of insect structure, development, and classification, including practice in collecting and preserving specimens. Any forenoon hours.
3 units, either semester (McCracken)

1a. Morphology and Physiology of Insects.—Continuation of the preceding course, devoted to the study of the metamorphosis, comparative morphology, and special physiology of insects. Any forenoon hours. 3 units, either semester (McCracken)

2. Classification and Development of Insects.—Continuation of the preceding courses, devoted especially to a rapid study of the present-day classification into orders, families, and genera of the insect class, and to a study of the characteristics of the life history of insects of all the different orders. Forenoon hours.
2 units, both semesters (McCracken)

3. Economic Entomology: Forest Insects.—A study of the insect enemies of forest and shade trees. The course includes field, laboratory, and bibliographic work. Must be preceded by courses 1 and 1*a*. Forenoon hours. 2 or 3 units, 1st semester (Doane)

3a. Economic Entomology: Orchard and Garden Insects.—A study of the principal injurious and beneficial insects of the orchard and garden. Includes field, laboratory, and bibliographic work, and a

weekly lecture on the history, principles, and practice of economic entomology. Must be preceded by courses 1 and 1*a*. Forenoon hours.
2 or 3 units, 2d semester (DOANE)

4. Economic Entomology: Coccidæ (the scale insects).—A study of the classification, general biology, and economic relations of the scale insects, with particular attention to the more important injurious ones of the Pacific Coast. Field, laboratory, and bibliographic work, with occasional lectures. Must be preceded by courses 1 and 1*a*. Forenoon hours. 2 or 3 units, either semester (DOANE)

5. General Entomology.—A course of lectures and demonstrations. Open to students who have had some work in Biology (Zoology, Botany, or Physiology). T. 9:15. 1 unit, 2d semester (KELLOGG)

6. Insects and Disease.—A course on the relations of insects to the dissemination of disease in man and the domestic animals. One lecture and one or two laboratory periods a week. Open to students of some previous laboratory training in biology. Lec. Th. 9:15; Lab. forenoon hours. 1 or 2 units, 2d semester (KELLOGG)

7. Advanced Work.—Advanced study and investigation of the biology of insects. Laboratory and field work. By arrangement.
2 to 5 units, both semesters (KELLOGG)

Work for graduate and special students will be specially arranged.

Major students in Entomology must obtain before graduation twenty-eight units' credit in Entomology, and credit for course 1 in Zoology, and course 1 in Botany, making forty units in biological subjects. Some previous work in Biology should be done before taking up any course in Entomology.

The *Entomological Collections* contain authoritatively determined specimens, accessible for comparison, in all of the insect orders, and include many sets of specimens illustrating the development and habits of insects. There is included, also, the most important existing collection of North American Mallophaga, comprising the types of four-fifths of all the species so far described from North America and the Pacific Islands, an unusually large collection of Coccidæ (scale insects), and a valuable series of specimens from the Galapagos Islands.

BIONOMICS

8. Organic Evolution.—Lectures on the laws or principles of biology and the factors in organic evolution. Not open to first-year students. Certain lectures in this course are given by Mr. LUTHER BURBANK. M. W. F. 10:15.
1 or 2 units, both semesters (JORDAN, KELLOGG, RICHARDSON)

9. Man in Nature and Evolution.—Lectures on the evolutionary history of man, and his present status in nature. Open only to students who have had course 8 or its equivalent. T. Th. 9:15.

2 units, 1st semester (KELLOGG)

Laboratory Fees.—Three dollars per semester for each laboratory student, except course 6. Laboratory Fees in course 6, $1.50.

GEOLOGY AND MINING

JOHN CASPER BRANNER, JAMES PERRIN SMITH, JOHN FLESHER NEWSOM, JAMES FARLEY MCCLELLAND, Professors.

AUSTIN FLINT ROGERS, Assistant Professor.

LUTHER WILLIAM BAHNEY, GEORGE I. FINLAY, Instructors.

HUGO EDMUND KRAMM, ARTHUR B. HUGHES, BASIL PRESCOTT, EDGAR A. SOPER, JOHN R. PEMBERTON, DONALD STEEL, ARTHUR BURTON SHUTTS, FRANK WARREN TURNER, Assistants.

GEOLOGY

Students intending to make geology their major subject should offer, as a part of their entrance preparation, solid geometry, trigonometry, physics, chemistry, zoology, and French or German, or both; otherwise the mathematics, physics, chemistry, and language must be taken in the University.

1. Dynamic and Structural Geology.—Lectures, with syllabus. M. W. F. 8:15. 3 units, 1st semester (BRANNER)

1a. Physiography.—Lectures, with syllabus. W. 8:15.

1 unit, 2d semester (BRANNER)

2. Economic Geology.—Lectures, with syllabus. Open to students who have completed course 1. T. Th. 8:15.

2 units, 2d semester (BRANNER, NEWSOM)

3. Topographic Geology.—Field and laboratory work, with the construction of geologic maps and sections. Open to students who have completed course 1 in Geology, and course 4*a* in Civil Engineering.

4 units, summer vacation (BRANNER, NEWSOM, FINLAY)

4. Field Geology.—Field practice in working out geology in the field and its representation upon topographic maps and sections. Prerequisites: Geology 1, 5, and Civil Engineering 4*a*.

5 units, summer vacation (BRANNER, NEWSOM, FINLAY)

5. Mineralogy.—(*a*) Methods of study and the determination of minerals, including Crystallography and Blowpipe Analysis (first

semester); (*b*) Study of common and important minerals, with lectures on the origin and occurrence of minerals and the uses of minerals (second semester). Open to students who have taken or are taking qualitative analysis. (*a*) T. Th. 8:15-10:15 and W. 1:30-4:30; (*b*) Lec. Th. F. 11:15, Lab. Th. F. 1:30-4:30.

3 units, both semesters (Rogers, Kramm)

6. Petrography.—(*a*) Crystal optics and study of rock-forming minerals in thin sections and hand specimens (first semester); (*b*) Study of principal rock types, igneous, sedimentary, and metamorphic (second semester). Open to students who have completed course 5 or equivalent. (First semester) Lec. T. Th. 11:15, Lab. M. T. 1:30-4:30; (second semester) Lec. M. W. 11:15, Lab. T. W. 1:30-4:30.

3 units, both semesters (Rogers)

7. Paleontology.—(*a*) Systematic Paleontology, or the history and character of organisms (first semester); (*b*) Historical Geology, or the history and character of geologic formations (second semester). Open to students who have completed course 1. Lec. M. W. F. 11:15; Lab. 8-4:30 by arrangement.

4 units, both semesters (Smith)

8. Paleontology.—Original investigation of various problems in paleontology, especially of invertebrate morphology, and of the distribution of faunas. This course will consist entirely of private work, in field and laboratory. Open to advanced students and graduates. 8-4:30 by arrangement. 2 to 5 units, both semesters (Smith)

9. Advanced Mineralogy.—Properly qualified students may take up one or more of the following lines of study: (1) crystal morphology, (2) crystal optics, (3) chemical mineralogy and mineral analysis, (4) chemical photography and rock analysis, (5) paragenesis of minerals (introduction to study of ore-deposits). These courses serve as a direct preparation for original work. By arrangement.

1 to 5 units, either semester (Rogers)

10. Paleontology.—Lectures on special topics. Open to advanced students and graduates. Lec. T. Th. 11:15; Lab. by arrangement.

2 units, both semesters (Smith)

11. Special Courses.—Special courses of instruction and training are laid out for advanced and special students according to the needs and qualifications of each individual. Special investigations are taken up by advanced students as rapidly as it is possible for them to undertake such work advantageously.

1 to 5 units, both semesters (Branner, Newsom)

Laboratory and Syllabus Fees.—Courses 1, 2, $2.50 each; course 3, $10; course 4, $15; course 5, $3 each semester.

MINING AND METALLURGY

Students intending to make Mining and Metallurgy their major subject should offer, as a part of their entrance preparation, solid geometry, trigonometry, advanced algebra, physics, chemistry, zoology, and Spanish, French or German; otherwise the mathematics, physics, chemistry, and one language must be taken in the University.

Bachelor of Arts

The following is a general summary of the courses that lead to the degree of Bachelor of Arts for students graduating prior to 1911.

First Year—Applied Mathematics 1 (10 units); Chemistry 1, *a*, 6, *b* (10 units); Engineering 1*a*, 1*b* (6 units); Physics 7 (4 units). Total, 30 units.

(None of the first-year subjects offered in the second semester can be taken without the first semester's work. First-year students can therefore advantageously enter the course as outlined above only at the beginning of the first semester.)

Second Year—Applied Mathematics 2, 3 (16 units); Chemistry, *d* (3 units); Civil Engineering 4*a* (5 units); Geology 5 (6 units); Mechanical Engineering 11 (2 units). Total, 32 units.

Third Year—Engineering, 2, 3*a* (8 units); Mechanical Engineering 13*c*, 31 (7 units); Geology 1, 2, 3*, 4*, 6, 9 (23 units); Mining and Metallurgy 8, 9 (6 units). Total, 34 units.*

Fourth Year—Geology 7*a* or 7*b* (4 units); Mining and Metallurgy 1*a*, 1*b*, 2 (10 units); Chemistry *e* or Mining and Metallurgy 12 (3 units); Mechanical Engineering 24, 36 (4 units); Electrical Engineering 1 (4 units). Total, 25 units.

Engineer of Mines

The following is a summary of courses that will lead to the degree of Engineer of Mines for students entering the Department during and after 1907:

Chemistry.—1*a* General Inorganic (lectures, 4 units; Laboratory, 2 units); 6, *b* Qualitative Analysis (lectures, 1 unit; Laboratory, 3 units); *d* Quantitative Analysis (4 units); *n* Assaying (3 units). Total, 17 units.

Physics.—6 Engineering Physics, 8 units.

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* Geology 3 and 4 (9 units) are taken during the summer vacation.

Applied Mathematics.—1 first-year Mathematics: Algebra, Trigonometry, and Co-ordinate Geometry (10 units); 2 Calculus (6 units); 3 Theoretical Mechanics (10 units). Total, 26 units.

Engineering.—1*a* Linear Drawing and Lettering (1 unit); 1*b* Descriptive Geometry (5 units); 2 Mechanics of Materials, Testing of Materials (5 units); 3*a* Hydraulics (3 units). Total, 14 units.

Civil Engineering.—4*a* Elementary Surveying, 5 units.

Mechanical Engineering.—1*a* Forge Work (2 units); 11 Elementary Machine Drawing (2 units); 15 Machine Design (5 units); 31 Heat Engines (3 units); 24 Experimental Engineering (8 units); 35 The Mechanical Engineering of Central Power Stations (2 units). Total, 17 units.

Electrical Engineering.—1 Elements of Electrical Engineering, 4 units.

Geology.—1 Dynamic and Structural Geology (3 units); 2 Economic Geology (4 units); 3 Topographic Geology, Summer (3 units); 4 Field Geology, Summer (5 units); 5 Mineralogy (6 units); 6 Petrography (4 units); 7 Paleontology, Historical Geology (4 units). Total, 29 units.

Mining and Metallurgy.—1 Mining (5 units); 2 Mine Plant (5 units); 3 Design of Mine Plant (3 units); 4 Ore Dressing, lectures (3 units); 5 Mine Engineering (2 units); 6 Mine Thesis; 7 Summer Mining); 8 Metallurgy (4 units); 9 General Metallurgical Laboratory (2 units); 10 Metallurgical Laboratory (3 to 5 units, optional). Total, 24 to 29.

General Courses.—History (4 to 6 units); French, German, or Spanish (6 units); English (6 units); Economics (6 units); Law (4 to 6 units). The equivalents of these courses, excepting English, may be elected in other departments than those named. Total, 26 to 30 units.

A course with requirements similar to the above will be offered for students desiring to obtain the degree of Metallurgical Engineer. Students desiring to specialize in mining geology may substitute a geological thesis for the mining thesis, and may substitute advanced courses in geology and chemistry for certain of the courses in mechanical engineering.

1. Mining.—*a, b.* Mining operations and methods, including prospecting, development, methods of working, timbering, and hoisting. Lectures and laboratory. T. W. Th. F. 10:15.

4 units, 1st semester; 3 units, 2d semester

(Newsom, McClelland)

2. **Design of Mine Plant,** with thesis. W. Th. F. 1:30-4:30.
3 units, 2d semester (McClelland)

Mining

For students entering in 1907 and thereafter the following courses in mining will be given:

1. **General Lectures on Mining.**—Including methods of earth and rock excavation, prospecting, tunneling, shaft sinking, and mining methods. 3 units, 1st semester; 2 units, 2d semester

2. **Lectures on Mine Plant.**—Including hoisting machinery, compressors, mine pumps, ventilating fans, and the handling of ore underground and on the surface.
3 units, 1st semester; 2 units, 2d semester

3. **Design of Mine Plant.**—To be taken in connection with course 6 (Mine thesis). Each student designs in detail portions of a mining plant to meet certain fixed requirements as to topography, output, etc.
2 units, 1st semester; 1 unit, 2d semester

4. **Ore Dressing.**—Lectures on crushing and concentrating machinery and methods. Comparison of milling practice in different parts of the United States. Ten afternoons in laboratory.
3 units, 1st semester

5. **Mine Engineering.** Lectures on general engineering problems in connection with mining operations, including administration, organization, mine examination, accounting, surveying, etc.
2 units, 2d semester

6. **Mine Thesis.** Each student describes and estimates the cost of the development and equipment of an hypothetical mining property under conditions which are assigned so as to fit the experience he has gained in his summer work.

7. **Summer Mining.**—Two months' systematic work in the mines. Between fourth and fifth years. 4 units

Metallurgy

8. **General Metallurgy.**—Four lectures a week throughout the semester. Required of all Mining and Metallurgy majors; open to others who have completed Chemistry 2. T. W. Th. F. 10:15.
4 units, 2d semester (———, Bahney)

9. **General Metallurgy Laboratory.**—Open only to those who have completed Chemistry 11 and who are taking or have had course 8. Th. F. 1:30-4:30. 2 units, 2d semester (———, Bahney)

10. Metallurgy of Constructive Materials.—A study of the manufacture and physical properties of iron, steel, and other alloys, with reference to their selection as constructive materials. Two lectures a week, and an occasional afternoon of laboratory work. Students taking this course are expected to have a knowledge of Elementary Chemistry. Lec. W. F. 11:15; Lab. by arrangement.

2 units, first semester (———)

11. Metallography and Physics of the Metals.—Recitations, reading, and laboratory work. Howe's "Iron, Steel, and Other Alloys" will be used as a text. The laboratory work will include a study of the micro-structure of the industrial metals and alloys, and of the influence of chemical composition, thermal and mechanical treatment, upon their structure. Also the relation of the structure of metals and alloys to their physical properties. Open only to students who have completed Chemistry *2, d,* and *j.* 3 to 5 units, either semester (———)

12. Metallurgical Laboratory.—Considerable option will be allowed in the work of this course. A student may either take up some problem or problems in connection with the extraction of metals from their ores, such as the facilities of the laboratory will permit, or he may take up advanced work in the physics of metals, metallography, etc. Students wishing to take up work in connection with the extraction of metals from their ores must have completed Chemistry *d* and *e,* or their equivalent. Those wishing to take up advanced work in the physics of the metals, metallography, etc., must have completed Chemistry *d* and *j,* or their equivalent. 1:30-4:30 by arrangement.

3 to 5 units, either semester (BAHNEY)

Laboratory and Syllabus Fees.—Courses 1*a, b,* $7.50 each; 8, 10, $5 each; course 9, $20; courses 11, 12, $5 per unit of laboratory credit.

ENGINEERING

A. Entrance Subjects

Students must present among their entrance subjects solid geometry and trigonometry, in order to take the first year's work in applied mathematics for engineers. Those who fail to do this will not be able to graduate in less than five years.

B. General Courses

I. Applied Mathematics

First-Year Courses:—Algebra; Trigonometry; Co-ordinate Geometry.

Second-Year Courses:—Calculus; Theoretical Mechanics.
(See announcement of Department of Applied Mathematics, p. 58.)

II. General Technical Courses

1a. Linear Drawing and Lettering.—(Drafting two afternoons a week, September and October.) Open to all students, and required of students in Engineering. The instruments and materials for this course cost from twenty to thirty dollars. 1:30-4:30, (I) M. T., (II) Th. F., (III) W. (and S. 9-12). 1 unit, either semester (Foss)

1b. Descriptive Geometry.—Including applications to shades, shadows, and perspective. (Two afternoons of drafting each week, November and December. Two lectures and two afternoons of drafting each week, January to May.) This course is open to students who have completed or who are taking Solid Geometry and Engineering 1*a*, and is required of students in Engineering. Lec. T. Th. 10:15; Dft. (I) M. T., (II) Th. F. 1:30-4:30.

1 unit, 1st semester; 4 units, 2d semester (Foss)

2. Applied Mechanics:

a. Mechanics of Materials.—Under this head are treated the theory of the strength and elastic properties of the ordinary materials of engineering construction. The main subjects covered are simple tension, compression, and shear; theory of flexure, with applications to simple and continuous beams; theory of long columns; torsion; repeated stress; sudden stress and resilience. (Lectures and recitations three hours a week.)

b. Testing of Materials.—Each student is required to make a series of experiments, testing the strength and elastic properties of wrought iron, cast iron, steel, and wood. A careful record of all experiments is required of every student. (Laboratory work, six hours a week.)

Open to students who have completed the first- and second-year courses for Engineering students in Applied Mathematics; required of all students having Engineering as a major subject. Rec. M. W. F. 9:15; Lab. (I) M. W. F. 10:15-12:15, (II) Th. F., (III) M. T. 1:30-4:30.

5 units, 1st semester (Wing)

3. Hydraulics:

a. Hydrostatics and Hydraulics.—This course treats of fluid pressure the principles of fluid equilibrium, and the laws governing the flow of water through orifices, over weirs, in closed conduits, and in open channels. Open to students who have completed courses 2 and 3 in Applied Mathematics. M. W. F. 9:15.

3 units, 2d semester (Hoskins)

b. Hydraulic Motors.—A discussion of the theory of the main types of turbines, including centrifugal pumps. A few lectures on the general theory of energy and on relative motion are given as an introduction to the course. Open to students who have completed course 3*a*. M. W. F. 9:15. 3 units, 1st semester (Hoskins)

I. CIVIL ENGINEERING

Charles David Marx, Charles Benjamin Wing, Leander Miller Hoskins, John Charles Lounsbury Fish, Professors.
John Harrison Foss, Charles Moser, Instructors.

A. Topographic Engineering

4a. Elementary Surveying.—Instruments; systems of co-ordinates; methods of surveying; latitude and azimuth; errors of observation; surveys; computing and mapping. (Lectures two hours, drafting and field work nine hours, each week.) Open to students who have completed Engineering 1*a* and Applied Mathematics 1. Required of students in Civil and Mining Engineering. Lec. T. Th. 9:15 (first semester), M. W. 8:15 (second semester); Field S. 9-4:30.
5 units, either semester (Foss)

4b. Elementary Surveying.—Course 4*a* abridged for students in Mechanical and Electrical Engineering. (Field work, reading, and drafting, six hours each week.) S. 9-4:30.
2 units, 1st semester (Foss)

B. Railroad Engineering

6a. Railroad Surveying.—Including the transition curve and earthwork. (Recitations two hours, drafting and field work nine hours each week.) Open to students who have completed 4*a*. Required of students in Civil Engineering. Lec. T. Th. 9:15; Field S. 9-4:30.
5 units, 2d semester (Fish)

6b. Railroad Location.—Economics of location. Open to students who have completed 6*a*. 2 units, 1st semester (Fish)

6c. Railroad Construction.—(Drafting-room, two afternoons a week.) Open to students who have completed 6*a*, and who have taken or are taking 8*b*. 2 units, 2d semester (Fish)

C. Structural Engineering

8a. Elements of Design.

1. *Materials.*—[See course 10 in Mining and Metallurgy.]

2. *Mechanics of Structures.*—Course 3 in Applied Mathematics is extended to the analytical and graphical determination of stresses in simple trusses. (Drafting-room, nine hours a week first half of semester.)

3. *Theory of Structural Details.*—Course 2 is extended to an investigation of the distribution of stresses in structural details. (Drafting nine hours a week, last half of semester.)

Open to students who have completed course 1 in Engineering, and who have taken or are taking course 2 in Engineering, and also course 11*c* in Geology and Mining. Required of all students having Civil Engineering as a major subject. Lec. M. W. F. 10:15; Dft. W. Th. F. 1:30-4:30. 3 units, 1st semester (WING)

8b. Elements of Design.

1. *Materials.*—Structural materials, other than metals, are studied from an engineering standpoint. Wood, stone, brick, limes, cement, etc., are considered in order. (Lectures three hours a week first half of semester.)

2. *Foundations.*—Under this head are considered the bearing power of soils, strength of piles, distribution of pressures, and similar details connected with the design of simple foundations. (Lectures three hours a week last half of semester.)

3. *Design.*—Complete designs are made, including working drawings, bill of materials, and estimate of cost, of some simple structure, such as a mill building or highway structure. (Drafting-room, nine hours a week first half of semester; six hours a week last half of semester.)

4. *Testing.*—Extending the work of course 2*b*. Each student is required to make a series of experiments, testing the physical properties of cement. (Laboratory, three hours a week last half of semester.)

Open to students who have completed course 8*a* in Civil Engineering; required of all students having Civil Engineering as a major subject. Lec. M. W. F. 10:15; Dft. W. Th. F. 1:30-4:30.

5 units, 2d semester (WING)

8c. Elements of Design.—Courses 8*a* and 8*b* abridged to meet the requirements of students having Mining, Mechanical, or Electrical Engineering as a major subject. Special applications are made to hoisting and conveying structures, mill buildings, and central station buildings. (Hours to be arranged by consultation.)

Open to students who have completed courses 1 and 2 in Engineering, and course 10 in Mining and Metallurgy. W. Th. F. 1:30-4:30.

3 units, 2d semester (WING)

9. Railway Bridges.—This course comprises the determination of the stresses in modern types of railroad bridges, including cantilever and swing spans, masonry arches, and arch ribs; the discussion of the most economical types, spans, and dimensions of bridges and bridge members; the study of the methods of constructing sub-aqueous foundations, shop methods, erection, inspection of material, specifications, and other factors influencing the design of bridges. Designs are made by each student to fulfill actual conditions, the parts proportioned, and bills of material prepared. Open to students who have completed course 8. (Lectures two hours per week, drafting nine hours.) W. Th. F. 1:30-4:30. 5 units, both semesters (WING)

D. Hydraulic Engineering

12. Water-Supply Engineering for Towns and Districts.—Sources of supply. Collecting and storing of water, either for water supply of towns or for irrigation purposes. Settling, filtering, conducting, and delivering of water, including the study and design of all accessory works. (Three hours lectures and recitations, six hours drafting.) Open to students who have completed courses 2 and 3 in Engineering and 4*a* and 8*a* in Civil Engineering; required of all students who take their major in Hydraulic Engineering. Lec. M. W. F. 9:15; Dft. M. T. 1:30-4:30 5 units, 1st semester (MARX)

13. Sanitary Engineering.—Including sewerage of towns and drainage of lands. Special attention will be given to the study of all municipal sanitary problems, such as removal of sewage, destruction of garbage, construction, maintenance, sweeping, and repairs of streets and pavements. (Three hours lectures and recitations, six hours drafting.) Open to students who have completed courses 2 and 3 in Engineering and 4*a*, 8*a*, and 12 in Civil Engineering; required of all students who take their major in Hydraulic Engineering. Lec. M. W. F. 9:15; Dft. M. T. 1:30-4:30. 5 units, 2d semester (MARX)

15. Construction of Canals, River and Harbor Improvements.—Lectures and designing as per arrangement. Open to students who have completed courses 2*a*, 2*b*, and 3 in Engineering, and 4*a* and 8*a* in Civil Engineering. 2 units, both semesters (MARX)

16. Technical Seminary.—Study of German and French technical journals. Open only to fourth-year students in Civil Engineering. 2 units, both semesters (MARX)

II. MECHANICAL ENGINEERING

William Frederick Durand, Guido Hugo Marx, Professors.
William Rankine Eckart, Associate Professor.
Everett Parker Lesley, Assistant Professor.
Lawrence Edminster Cutter, Charles Norman Cross, Frank Oakes Ellenwood, Edward John Stanley, James Bennett Liggett, Theron James Palmateer, Robert Henry Harcourt, Instructors.

[The Department of Mechanical Engineering desires to announce that it has in anticipation, beginning with the class entering in the fall of 1910, a change in its course of study of such character as to provide a definite five-year curriculum leading to the degree of Mechanical Engineer. The proposed changes are of the following general character:

(*a*) The postponement to the fifth year of a considerable part of the professional work now given in the fourth year.

(*b*) The introduction at appropriate points of certain additional courses of engineering work.

(*c*) The addition of a considerable amount of non-engineering work intended to give broader and better preparation for the practice of engineering as a profession.

Further announcements in detail will be made at a later time.]

The courses specified below represent the present major work for the undergraduate degree with Mechanical Engineering as a major subject. In addition, the typical work for this major includes the following courses in other departments:

Applied Mathematics 1, 2, 3; Engineering 1*a*, 1*b*, 2, 3*a*, 3*b*; Physics 7 and 6, or 7 and 3; Chemistry 1 and *a*; Metallurgy 11*c*; Electrical Engineering 1.

Students entering with advanced credit may elect such other work as time and preparation permit.

1-8. Shop Work:

1*a*. *Forge Practice.*—(2 exercises a week, half year.)
1*b*. *Lecture in Forge Work.*—(Saturday, 10:15.)
3*a*. *Foundry Practice.*—(2 exercises a week, half year.)
3*b*. *Lecture in Foundry Work.*—(Saturday, 9:15.)
5. *Woodworking.*—(2 exercises a week, half year.)
6*a*. *Pattern Shop Practice.*—(2 exercises a week, half year.)
6*b*. *Lecture in Pattern Shop Work.*—(Saturday, 8:15.)
7*a*. *Elementary Machine Shop Practice.*—(2 hours a week, half year.)
7*b*. *Lecture in Machine Shop Work.*—(Saturday, 8:15)

8. *Advanced Machine Shop Practice.*—(3 hours a week, half year.)

Courses 1-8 are open to all students, and required of students in Mechanical Engineering. Daily 8:15-4:30, by arrangement.

2 or 3 units, each semester
(STANLEY, LIGGETT, PALMATEER, HARCOURT)

11. Elementary Machine Drawing.—Practice in making freehand sketches of machine parts from which working drawings, tracings, and blueprints are developed. (Six hours a week in drafting-room.) Prerequisite: course 1*a* in Engineering. (I) T. Th. 9:15-12:15, (II) M. T. 1:30-4:30. 2 or 3 units, either semester (CUTTER)

13. Elementary Machine Design:

a. Function of machines; motion, force, and work in machines; valve gears. (Three hours a week, lectures, and recitations, second semester.)

b. Drafting course applying the principles treated in *a.* (Six hours a week drafting, second semester.)

Prerequisites: course 2 in Mechanical Engineering and course 1*b* in Engineering. Courses *a* and *b* must be taken together and are required of students in Mechanical Engineering. Lec. M. W. F. 8:15; Dft. M. or T. or F. 1:30-4:30. 5 units, 2d semester (G. H. MARX)

14. Machine Design.—Study of machine details, such as fastenings (including bolts and screws, riveted joints and boiler design, fits and fitting); axles, shafts, and spindles; journals, boxes, and lubrication; ball and roller bearings; sliding surfaces; couplings and clutches; gear belt, rope, and chain transmission systems; flywheels; springs; frames, and supports. (Two hours a week recitations and lectures, six hours in the drafting-room, throughout the year.) Open to students who have completed course 13 in Mechanical Engineering, and who are taking course 2 in Engineering; required of students in Mechanical Engineering. Lec. T. Th. 8:15; Dft. M. T. (first semester), W. Th. (second semester), 1:30-4:30.

4 units, both semesters (G. H. MARX)

15. Machine Design.—An abridged treatment of the field covered in courses 13 and 14. (Three hours a week recitations and lectures, six hours a week in the drafting-room, first semester.) Open to students who have completed Engineering 1*b*, Mechanical Engineering 11, and are taking Engineering 2. Intended for Engineering students whose major subject is not Mechanical Engineering. Lec. M. W. F. 8:15; Dft. Th. F. 1:30-4:30. 5 units, 1st semester (G. H. MARX)

16. Advanced Machine Design.—Design of complete machines. Students may elect machine tools, cranes, steam or gas engines, or

special problems. (One lecture and six hours drafting per week.) Intended for fourth-year students who have completed courses 14, 31, 33. Lec. F. 10:15; Dft. 1:30-4:30, by arrangement.

3 units, both semesters (G. H. Marx, Cutter)

21-25. Experimental Engineering:

21. *Calibration and Use of Engineering Apparatus and Instruments*, including gages, thermometers, planimeters, indicators, dynamometers, meters, steam calorimeters, fuel calorimeters, and the testing of lubricating oils. (One lecture and six hours in the laboratory per week.) Open to students who have completed course 31. Required of third-year students in Mechanical Engineering. Lec. F. 11:15; Lab. 1:30-4:30, by arrangement. 3 units, 2d semester (Cross, Ellenwood, ———)

22. *Testing of Steam Engines and Boilers*, including determination of engine clearance; valve setting; mechanical efficiency, economy and complete tests of simple and compound engines, steam turbines, gas engines; tests for speed regulation, and the testing of boilers. (One lecture and six hours in the laboratory per week.) Open to students who have completed course 21. Required of fourth-year students in Mechanical Engineering. Lec. F. 10:15; Lab. 1:30-4:30, by arrangement.

3 units, 1st semester (Cross, Ellenwood, ———)

23. *Testing of Pumping Machinery and Power Plant Auxiliaries*, including steam and centrifugal pumps, hot-air pumping engines, injectors, heaters and economisers, blowers, condensers, refrigerating machinery, and a complete power-plant test. (One lecture and six hours laboratory per week.) Open to students who have completed courses 21 and 22. Required of fourth-year students in Mechanical Engineering. Lec. Th. 10:15; Lab. 1:30-4:30, by arrangement.

3 units, 2d semester (Cross, Ellenwood, ———)

24. *An Abridged Course in Experimental Engineering*, intended for Civil Engineering, Geology and Mining, and Chemical Engineering students. Includes the calibration of apparatus, testing of steam and gas engines, steam turbines, boilers, pumps, and water wheels. (One lecture and six hours in the laboratory per week.) Open to students who have completed course 31. Lec. F. 10:15; Lab. 1:30-4:30, by arrangement. 3 units, either semester (Cross, Ellenwood, ———)

25. *An Advanced Course in the Investigation of Engineering Problems.* Open to all students who have completed courses 21, 22, and 23. 1:30-4:30, by arrangement.

1 to 5 units, both semesters (Cross, Ellenwood, ———)

31. Heat Engines.—Mechanical theory of heat and its applica-

tions. (Two lectures and three hours' office work per week.) Required of third-year students in Mechanical Engineering. Lec. T. Th. 9:15; Office T. Th. 10:15-12:15. 3 units, 1st semester (DURAND)

33. Heat Engines.—Continuation and application of course 31. (Two lectures and three hours' office work per week.) Required of third-year students in Mechanical Engineering. Lecture and office work as for 31. 3 units, 2d semester (DURAND)

34. Thermodynamics.—A course in theoretical thermodynamics, with special reference to heat engines, and intended to supplement course 6, which is a prerequisite. Required of fourth-year students in Mechanical Engineering. M. 9:15. 1 unit, 2d semester (DURAND)

35. The Mechanical Engineering of Central Power Stations.—Lectures. Prerequisite: course 31. M. W. 10:15.
2 units, 1st semester (DURAND)

36. Pumping Machinery.—A lecture course for fourth-year students. Prerequisite: course 31, first semester. M. W. 10:15.
2 units, 2d semester (DURAND)

37. Seminary.—A weekly conference for the discussion of current engineering literature and of special topics. Open to fourth-year students only. W. 11:15. 1 unit, both semesters (DURAND)

Laboratory Fees.—Courses 1*a*, 3*a*, 7*a*, three dollars per credit hour; courses 5, 6*a*, 8, two dollars per credit hour; courses 21, 22, 23, 24, six dollars; course 25, three dollars per credit hour.

III. ELECTRICAL ENGINEERING

HARRIS JOSEPH RYAN, Professor.
SAMUEL BARCLAY CHARTERS, JR., Assistant Professor.
WILLIAM ARTHUR HILLEBRAND, Instructor.

[The Department of Electrical Engineering desires to announce that it has in anticipation, beginning with the class entering in the fall of 1910, a change in its course of study of such character as to provide a definite five-year curriculum leading to the degree of Electrical Engineer. The proposed changes are of the following general character:

(*a*) The postponement to the fifth year of a considerable part of the professional work now given in the fourth year.

(*b*) The introduction at appropriate points of certain additional courses of engineering work.

(*c*) The addition of a considerable amount of non-engineering work

intended to give broader and better preparation for the practice of engineering as a profession.

Further announcements in detail will be made at a later time.]

The following courses of instruction are given. Those required for the undergraduate degree with Electrical Engineering as a major subject are so specified; in addition the work required for this major includes the following courses in other departments:

Applied Mathematics A, B, 1, 2, 3; Engineering 1*a*, 1*b*, 2*a*, 2*b* 3*a*, 3*b*; Civil Engineering 4*b*; Mechanical Engineering 1*a*, 1*b*, 3*a*, 3*b*, 5, 6*a*, 6*b*, 7*a*, 7*b*, 11, 13*a*, 13*b*, 21, 22, 31, 33, 35; Physics 6*a*, 6*b*, and 9; Chemistry 1 and *a*.

Students entering with advanced credit may also elect such other work as time and preparation permit.

1. Elements of Electrical Engineering.—An abridged course in the industrial applications of electricity, intended for non-electrical engineering students. Two laboratory lectures, one recitation, and one three-hour computing period per week. Prerequisites: courses 1, 2, and 3, in Applied Mathematics and course 6*b* in Physics. Lec. (Min.) M. W., (Civ., Mech.) T. Th. 11:15; Rec. F. 11:15; Comp. (Min.) F. 1:30-4:30, (Civ., Mech.) Th. 1:30-4:30.

4 units, 1st semester (CHARTERS, HILLEBRAND, ———)

2. Electrical Energy.—Required of third-year students in Electrical Engineering. Class and laboratory instruction in the technology of magnetic, electric, and electrostatic phenomena, electrical machinery and auxiliaries in continuous and alternating current working. Second semester prerequisites: Applied Mathematics A, B, 1, 2, 3; Engineering 1*a*, 1*b*, 2*a*, 2*b*; Mechanical Engineering 11, 13*a*, 13*b*; Physics 6*a*, 6*b*, 9; Electrical Engineering 2*a* (first semester).

a. Recitations and Experimental Demonstrations. (First semester) Lab. Lec. M. 8:15; (second semester) Rec. M. T. W. F. 8:15.

1 unit, 1st semester; 4 units, 2d semester (RYAN, HILLEBRAND)

b. Laboratory Work. 1:30-4:30 by arrangement.

4 units, 2d semester (CHARTERS, HILLEBRAND)

[Course 2 is supplemented by Physics 9, laboratory work in electrical measurements (4 units, 1st semester).]

3. Electrical Engineering.—Required of fourth-year students in Electrical Engineering. Lectures, laboratory, and class work, elements of design to be elected in a particular specialty, and inspection and preparation of reports upon the chief electrical operations conducted in

the San Francisco Bay region. Prerequisites: Electrical Engineering, *2a, 2b*; Engineering, *3a*; Mechanical Engineering, 21, 31, 33.

8 units, 1st semester; 7 units, 2d semester
(RYAN, CHARTERS, HILLEBRAND)

a. Lectures:

*a*1. General Practice: (1) Standardization Authorized by the A. I. E. E. (2) Fire Hazard, National Electrical Code. (3) Economy in Transmission, Kelvin's Law. (4) Standard Machinery, Auxiliaries and Structural Supplies. (5) Municipal Distribution of Electricity for Miscellaneous Service. (6) Long distance transmission of power for general purposes. (7) Discussion of typical installations. (8) Elements of finance controlling the uses of electricity. (9) Survey of electrical industries. (12) Historical and biographical sketches. (RYAN)

(13) Electricity Applied to Transportation. (CHARTERS)

(14) Transmission of Intelligence. (HILLEBRAND)

3 lectures, 1st semester; 5 lectures, 2d semester.

*b*1. *Laboratory Work.*—Characteristic performance of standard machinery and auxiliary apparatus; engineering tests of magnetic materials, conductors, and insulations; illumination tests of arc and incandescent lamps; tests of machinery and auxiliaries for capacity, acceptance, and technical data. 1:30-4:30 by arrangement.

4 units, 1st semester (CHARTERS)

*b*2. Recitations, supplementing *b*1.

3 units, 1st semester (HILLEBRAND)

c. Applications.—Drill work, use of professional literature, and problems assigned in one of the following elective specialties:

*c*1. Elementary designs of power plants and systems of distribution; studies of corresponding practice as reported in literature and by visits to neighboring plants. (RYAN)

*c*2. Design studies in electric railway practice. (CHARTERS)

*c*3. Design studies in intelligence transmission. (HILLEBRAND)

d. Inspections.—Visits to, engineering study of, and reports upon electrical properties accessible to students.

(RYAN, CHARTERS, HILLEBRAND)

Division of time: *3a*, lectures, attendance only required, 1 unit, first semester, 2 units, second semester; *3b*1, laboratory, 4 units; *3b*2, recitations, 3 units; *3c*, applications, *3c*1, *3c*2 or *3c*3, 4 units; *3d*, inspections, 1 unit.

Students in Electrical Engineering are not permitted to register for particular sections only in courses 2 and 3. The work in all sections

of either course must be concurrent. A student who fails to do satisfactory work in these courses as a whole may be required to repeat all sections of a corresponding course, concurrently.

10. Graduate Work:

a. Advanced study and investigation as assigned to meet the needs of the individual.

b. Preparation of reports based upon results obtained in graduate work and their presentation to the Stanford Branch of the American Institute of Electrical Engineers.

c. Preparation of thesis required for the degree of Engineer in electrical engineering. (RYAN, CHARTERS, HILLEBRAND)

The Stanford Branch of the American Institute of Electrical Engineers is an organization authorized by the Institute and maintained by the members of the senior class for the discussion of the Transactions of the Institute, and of other topics as assigned, and the review of current electrical literature.

Students registering in electrical engineering for the first time should secure at the major professor's office a schedule of required studies that must be followed so that the course may be completed in four years, or in four years less the time gained by advanced standing allowed.

Laboratory Fees.—Two dollars per unit of university credit.

Syllabus Fees.—One dollar per course-section.

MEDICINE

ADOLPH BARKAN, Professor of Structure and Diseases of the Eye, Ear, and Larynx.

HENRY GIBBONS, JR., Professor of Obstetrics.

JOSEPH OAKLAND HIRSCHFELDER, RAY LYMAN WILBUR, Professors of Clinical Medicine.

STANLEY STILLMAN, EMMETT RIXFORD, Professors of Surgery.

WILLIAM OPHÜLS, Professor of Pathology.

WILLIAM FITCH CHENEY, Clinical Professor of Diseases of the Digestive System.

OLIVER PEEBLES JENKINS, Professor of Physiology.

JOHN MAXSON STILLMAN, Professor of Chemistry.

ARTHUR WILLIAM MEYER, Professor of Human Anatomy.

FRANK MACE MCFARLAND, Professor of Histology.

GEORGE CLINTON PRICE, Associate Professor of Zoology.

WILLIAM FREEMAN SNOW, Associate Professor of Hygiene.

ROBERT ECKLES SWAIN, Associate Professor of Chemistry.

In November, 1908, Cooper Medical College, founded in San Francisco, in 1882, by Dr. Levi Cooper Lane, was transferred to the Leland Stanford Junior University, on the sole condition that a school for the training of students for the degree of Doctor of Medicine be maintained and that certain memorials of the Founders be preserved. Instruction in the Department of Medicine will begin with the academic year 1909-10.

Admission to the Course in Medicine

Three years of collegiate work in Stanford University (approximately ninety unit hours), or its equivalent as accepted by the Committee on Advanced Standing, will be required for admission to the course in Medicine. This preparatory course must include one year of Physics with laboratory work, one year of Chemistry with laboratory work, one year of Physiology or Biology with laboratory work, and French or German (such a reading knowledge as shall be acceptable to the Department of Medicine).

The State law covering the practice of Medicine in California prescribes that every person before practicing medicine or surgery must produce satisfactory testimonials of good moral character and a diploma issued by some legally chartered medical school, the requirements of which shall have been at the time of granting such diploma in no particular less than those prescribed by the Association of American Medical Colleges for that year. For the year 1908 the Association of American Medical Colleges prescribes that every medical student must be registered in a medical college or department for four years and that his preparatory course shall have included two years of Latin, two years of Mathematics, two years of English, one year of history, two years of laboratory science, and six years of further credits in languages, literature, history, or science.

Students in any department of the University who desire to enter the medical course, and who have included in their course of study the subjects required for admission to the medical course, may, at the beginning of their fourth (or senior) year in the University, register as students of medicine, and on completion of the first year's work in medicine may receive the degree of Bachelor of Arts. Students entering the University with the intention of ultimately studying medicine will note that the Department of Physiology and Histology, in its course leading to the degree of Bachelor of Arts, includes the work preparatory to medicine and the first year of the medical course.

Candidates who have fulfilled the preliminary requirements and who have completed part of their medical course elsewhere, may be admitted

to advanced standing on such terms as shall be determined by the Department of Medicine with the approval of the Academic Council.

The Course in Medicine

The required period of study for the Degree of Doctor of Medicine will be four years (eight semesters). The work of the first three semesters will be given in Palo Alto and will be devoted mainly to laboratory studies, with lectures and demonstrations, in anatomy, physiology, histology, neurology, embryology, chemistry, pharmacology, and bacteriology. The work of the last five semesters will be given in San Francisco and will be devoted mainly to work in the pathological and clinical laboratories and in the hospital wards and dispensary.

Clinical Opportunities

At the City and County Hospital in San Francisco the College controls one hundred beds averaging about a thousand patients per year. The hospital facilities will be greatly improved with the erection of the new City and County Hospital, which the City of San Francisco is building at an expense of two million dollars. It is expected that the hospital will be completed in 1911.

Lane Hospital was designed as a teaching hospital. It has now seventy-five teaching beds, which number it is hoped to increase in the near future. The College Dispensary averages four to five thousand new patients per year.

Hospital Interneships

A large number of interneships are available for graduates in medicine in the City and County Hospital, Lane Hospital, and other hospitals in the City and State.

Fees

The tuition fees will be $150 per annum, with such laboratory fees and fees for anatomical material, etc., as may be fixed by the departments concerned.

STUDIES OF THE FIRST THREE SEMESTERS

1. **Human Anatomy.**—1st, 2d, and 3d semesters. (Meyer)

2. **Physiology of Muscle, Blood, and Circulation.** An experimental course covering the ground represented in Foster's Physiology, Part 1, or Howell's Text-book on the same subjects. (One lecture and five laboratory hours per week.) [Course 2 in the Department of Physiology and Histology.]

3 units, 1st semester (Jenkins, Slonaker)

3. Physiology of Digestion, Respiration, Elimination of Wastes, Metabolism and Nutrition.—[Course 3 in the Department of Physiology and Histology.]

3 units, 2d semester (JENKINS, SLONAKER)

4. Structure of the Nervous System.—[Course 4 in the Department of Physiology and Histology.]

3 units, 2d semester (STOLTENBERG)

5. Anatomy and Histology of the Sense Organs.—[Course 5 in the Department of Physiology and Histology.]

3 units, 1st semester (STOLTENBERG)

6. Histology.—[Course 9 in the Department of Physiology and Histology.]

3 units, 1st and 2d semesters (MCFARLAND)

7. Embryology.—[Course 10 in the Department of Zoology.]

2 units, 1st semester (PRICE)

8. Organic Chemistry.—A lecture course embracing a study of the classification, structural formulæ, and properties of the more important compounds of carbon. The chemical relationships of the larger groups of organic compounds, alcohols, aldehydes, and ketones, acids, amines, and the halogen, sulphur, and nitrogen compounds will be emphasized, special attention being given throughout the course to those compounds which are of physiological and pathological interest. [Course 3 in the Department of Chemistry.]

3 units, 2d semester (SWAIN)

9. Toxicology.—A laboratory course, accompanied by informal lectures, dealing with the more important poisons, their physiological action and the prominent reactions employed in their identification. A search for the common poisons, based on a systematic scheme of analysis will be made on artificially prepared materials. Students who have had no previous training in quantitative analysis will be given a preliminary course in volumetric and gravimetric analysis.

3 afternoons, 2d semester (SWAIN)

10. Physiological Chemistry.—[Course *g* in the Department of Chemistry.] 3 afternoons, 3d semester (SWAIN)

11. Physiological Chemistry.—[Course 11 in the Department of Chemistry.] 3 units, 3d semester (SWAIN)

12. Bacteriology.—A practical laboratory course in which students become familiar with the preparation of culture media, the prin-

ciples of sterilization and disinfection, and the methods of cultivating, staining, and identifying bacteria.

3 units, 3d semester (SWAIN)

13. Pharmacology.—3d semester.

14. Human Embryology. (MEYER)

15. Physiology of the Nervous System and Sense Organs.—[Course 6 in the Department of Physiology and Histology.]

3 units, 3d semester (JENKINS)

16. Journal Club.—[Course 15 in the Department of Physiology and Histology.] 1 unit, 3d semester

SCHEDULE OF THE COURSE IN MEDICINE

IN PALO ALTO

	Actual time (in hours)		Units
First Semester	Lec.	Lab.	of credit
Neurology			
Gross and minute anatomy of the Brain and Spinal Cord	1	6	3
Histology	1	6	3
Gross Anatomy (with Dissection)		9	3
Physiology			
Muscle, nerve, circulation	1	5	3
Embryology		6	2
	3	32	14
Second Semester			
Neurology	1	6	3
Histology	1	6	3
Gross Anatomy (with Dissection)		6	2
Physiology			
Digestion, respiration, nutrition, metabolism, etc.	1	5	3
Organic Chemistry	3		3
Toxicology		9	3
	6	32	17

Third Semester (First Semester of Second Year)

Bacteriology	1	6	3
Gross Anatomy (with Dissection)		6	2
Pharmacology (experimental)	2	3	3
Physiological Chemistry	3		3
Chemical laboratory (Physiological chemistry)		9	3
Physiology Nervous system, sense organs, etc.	1	5	3
Journal Club	1		1
	8	29	18

In San Francisco

Fourth Semester (Second Semester of Second Year)

	Unit Periods
Applied Anatomy (Medical and Surgical)	3
Medicine (Physical Diagnosis, etc.)	3
Surgery (Introductory)	4
General Pathology (Lectures and Discussions)	5
Pathological Histology (Laboratory)	2
Special Anatomy (Pelvic)	2
Materia Medica	2
Physical Therapeutics	2
	23

Fifth Semester (First Semester of Third Year)

Medicine (Lectures and Clinics)	7
Surgery (Lectures and Clinics)	6
Special Pathology (Lectures)	2
Clinical Laboratory	2
Gynecology	1
Genito-Urinary Diseases	1
Pediatrics	1
Ophthalmology	1
Obstetrics	2
	23

Sixth Semester (Second Semester of Third Year)

Medicine (Lectures and Clinics)	7
Surgery (Lectures and Clinics)	6
Gynecology	1
Special Pathology (Lectures)	2
Obstetrics (Lectures and Discussions)	2
Pediatrics	1
Dermatology	1
Ophthalmology, etc.	1
Neurology (Pathological)	1
X-ray Technique, etc.	1
	23

Seventh Semester (First Semester of Fourth Year)

	Unit Periods
Medicine (Clinic)	2
Medicine (Section work)	3
Neurology	1
Surgery (Clinic)	2
Surgery (Section work)	3
Obstetrics (Practical)	1
Ophthalmology, etc.	2
Genito-Urinary Diseases	1
Gynecology	1
Pediatrics	1
Psychiatry	1
Dermatology	1
History of Medicine (Lectures or Discussions)	1
Hygiene (Lectures)	1
	21

Eighth Semester (Second Semester of Fourth Year)

Medicine (Clinic)	2
Medicine (Section work)	3
Neurology	1
Surgery (Clinic)	2
Surgery (Section work)	3
Obstetrics (Practical)	1
Ophthalmology, etc.	2

Genito-Urinary Diseases 1
Gynecology 1
Pediatrics 1
Psychiatry 1
Dermatology 1
Legal Medicine (Lectures) 1
History of Medicine (Lectures or Discussions) 1
Hygiene (Lectures) 1

22

MARINE BIOLOGICAL LABORATORY

Professors Charles Henry Gilbert and Oliver Peebles Jenkins, Directors.

Professor Harold Heath, Assistant Professor Leonas Lance Burlingame, and Assistant Frank Walter Weymouth.

The Laboratory buildings are located at Pacific Grove, two miles west of Monterey, and stand on a low bluff immediately facing the sea. They consist of two two-story structures capable of accommodating about eighty students, and contain four general laboratories, one lecture-room, seventeen private rooms for special investigators, and a dark-room for photography. They are provided with aquaria, running water, and all necessary facilities for biological study. The library and apparatus of the University are available for use in the Laboratory.

Session of 1909

The Eighteenth Session will begin Monday, May 31st, and will extend over a period of six weeks, closing Saturday, July 10. The laboratory will be under the general supervision of Professor Heath.

Courses of Instruction

1. General Zoology.—An elementary course open to all students, and to teachers and others who desire an acquaintance with the anatomy and life-history of marine animals and with the methods pursued in laboratory study. (Heath)

2. Zoology.—Open to students who have had course 1 in Zoology or Physiology, or an equivalent. The object of this course is primarily to enable students to gain a wide general knowledge of marine forms, and to this end special attention will be devoted to collecting both along the shore at low tide and at the surface of the ocean. (Heath)

3. **Botany.**—General Morphology of Algæ. An elementary course open to all students. The time will be divided between field work, including a study of the distribution, habits, methods of collecting, methods of preserving, etc., of both marine and fresh water forms of the vicinity, and a systematic study of the morphology of the plants in the laboratory. (BURLINGAME)

4. **Botany.**—Special Algæ. Open to students who have had course 2 or an equivalent. The curriculum of this course will be adapted to the needs and wishes of the students. Prospective students are requested to confer with the instructor before registering for the course. (BURLINGAME)

Students successfully completing any of the above courses will receive five units of university credit. Only one course can be taken during the session.

Laboratory Fee.—The laboratory fee is twenty-five dollars.

THE UNIVERSITY LIBRARY

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EDITH MARGARET COULTER, Supervisor Serial Department.

The Library is housed in the Thomas Welton Stanford Library Building, which forms the central portion of the easterly half of the outer quadrangle façade. On the main floor are the general reading rooms, with accommodations for 220 readers, the reference room, serial room, and catalogue room. On the second floor are six seminary rooms, used respectively by the Departments of Economics, English Literature, Germanic Languages, Greek, Latin, and History.

The Library is open during term time on week days from 8:00 A. M. to 10:00 P. M., except on Saturdays, when it is closed at 3:30 P. M. During the short vacations the hours are from 8:00 A. M. to 4:00 P. M., Saturdays to 12:30 P. M., and during the long vacation from 9:00 A. M. to 4:00 P.M., Saturdays 9:00 A. M. to 12:00 M. The shelves are open to members of the faculty and to students engaged in advanced work, upon the recommendations of their instructors. Books, other than works of reference, not required for class use, are lent for a period of two weeks.

Including the Law Department collection the Library contains upwards of 116,000 volumes, and the number is rapidly increasing. Noteworthy special collections are the Timothy Hopkins Railway Library, the Thomas Welton Stanford Australasian Library, the Hildebrand Library, consisting largely of works on Germanic philology and literature, collected by the late Professor Hildebrand of Leipzig, and the David Starr Jordan Library of Zoology, consisting of several thousand volumes and pamphlets on fishes. Students may also have access to the private library of Dr. Branner, a large collection of geological works.

The Lane Medical Library, founded by the Directors of Cooper Medical College, is housed in Cooper College building, San Francisco. It contains about 35,000 volumes, including complete sets of many of the more important medical periodicals.

UNIVERSITY CHOIR

Godfrey C. Buehrer, Organist and Director.

The University Choir consists of three sections: choir *a*, choir *b*, and choir *c* (the instrumental section). Three hours of work per week are required from each member. Each choir is expected to sing at the regular University Sunday services every other Sunday. Two rehearsals per week are held.

Choir *a* is intended for singers having at least two years' experience in choir work, a good voice, and reading fairly well at sight music of a medium grade of difficulty. M. Th. 4:40-5:40.

Choir *b* will require of its candidates a good voice, ability to carry an independent part, and a working knowledge of musical notation. T. F. 4:40-5:40.

Choir *c*, the instrumental section, is open to performers on orchestral instruments only. Th. 7:30-9:30.

1 unit of credit per semester

Festival Chorus

A large chorus, taking part in the annual Stanford Music Festival, is open to all students able to sing. One of the great masterpieces among the choral works is studied each year. In 1909-10 Handel's "Messiah" will be studied. The chorus rehearses one hour per week. (No credit.) T. 7:30-8:30.

Stanford Symphony Orchestra

The Stanford Symphony Orchestra is open to all proficient performers on orchestral instruments. Two hours rehearsing required per week. The orchestra appears in symphony orchestra concert programmes in Assembly Hall. Th. 7:30-9:30.

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University: EELLS, DAVIS, GRANT, BABCOCK, CROTHERS.
Library: DAVIS, EELLS, STOW, STANFORD, REID.
Rules: DAVIS, LEIB, MILLER, CROTHERS.
Museum: LATHROP, GRANT, BABCOCK, GRAY, STANFORD.
Memorial Church: LATHROP, SLOSS, LEIB, REID, GRAY.

* Died September 16, 1908.

THE UNIVERSITY

[Office and office hours in parentheses]

President: David Starr Jordan. (111, 2-4.)
Vice-President: John Casper Branner. (332, 8:15-12:15, 2-5.)
Registrar: Orrin Leslie Elliott. (117, 8:15-12:15, 1:30-4:30, Saturday 9-12:15.)
Librarian: George Thomas Clark. (Library, 8:30-4:30.)
Dean of Women: Evelyn Wight Allan.
Secretary to the President: George Archibald Clark. (112, 9-12, 2-5.)

THE DEPARTMENTS

[(1) Executive Head; (2) Secretary of Department Faculty]

Greek: Augustus Taber Murray; Edward William Hope.
Latin: Henry Rushton Fairclough; Benjamin Oliver Foster.
Germanic Languages: George Hempl; Macy Millmore Skinner.
Romance Languages: John Ernst Matzke; Clifford Gilmore Allen.
English Literature and Rhetoric: Alphonso Gerald Newcomber; Samuel Swayze Seward, Jr.
English Philology: Ewald Flügel.
Philosophy: Henry Waldgrave Stuart*; George Holland Sabine.
Psychology: Frank Angell.
Education: Elwood P. Cubberley; Percy Erwin Davidson.
History: Ephraim Douglass Adams; Percy Alvin Martin.
Economics and Social Science: Allyn Abbott Young; James Marvin Motley.
Law: Frederic Campbell Woodward; Charles Andrews Huston.
Drawing: Arthur Bridgman Clark.*
Mathematics: Robert Edgar Allardice; Hans Frederik Blichfeldt.
Applied Mathematics: Leander Miller Hoskins.
Physics: Fernando Sanford; Joseph Grant Brown.
Chemistry: John Maxson Stillman; Robert Eckles Swain.
Botany: Douglas Houghton Campbell; George James Peirce.
Systematic Botany: William Russell Dudley; LeRoy Abrams.
Physiology and Histology: Oliver Peebles Jenkins.
Hygiene: William Freeman Snow.*
Zoology: Charles Henry Gilbert; John Otterbein Snyder.

* Acting.

Entomology and Bionomics: Vernon Lyman Kellogg.
Geology and Mining: John Casper Branner.
Civil Engineering: Charles David Marx; Charles Benjamin Wing.
Mechanical Engineering: William Frederick Durand; William Rankine Eckart.
Electrical Engineering: Harris Joseph Ryan; Samuel Barclay Charters, Jr.

STANDING COMMITTEES OF THE ACADEMIC COUNCIL

Advisory Board

Adams, Branner, Durand, Gilbert, Hoskins, C. D. Marx, Murray (Secretary), Sanford, Stillman (Chairman).

Administrative Committees

1. **Student Affairs:** Clark, Elliott, Price, Whitaker, Moreno.
2. **Athletics:** Angell, Adams, Howard, Snow, Whitaker.
3. **Public Exercises:** Howard, Hall, Newcomer, Stuart, A. A. Young.
4. **Literary Contests:** Alden, Bassett, Elmore, Seward, Veblen.
5. **Public Health:** Snow, Gilbert, Swain, Stoltenberg, Peirce.
6. **Delinquent Scholarship:** Gilbert, Elliott, Murray, Hoskins, Woodward.
7. **Public Entertainments:** S. W. Young, A. A. Young, C. D. Marx, Peirce, G. H. Marx.

Academic Committees

1. **Executive Committee:** Jordan, Branner, Elliott, Clark, Cubberley, Fairclough, Franklin, Gilbert, Green, G. H. Marx, Newcomer, Peirce, Woodward.
2. **Admission and Advanced Standing:** Elliott, Matzke, Ryan, Cubberley, Swain.
3. **Registration:** Elliott, Snow, Seward, Moreno, Snyder.
4. **Graduation:** Elliott, Jenkins, Anderson, Johnston, Cathcart.
5. **Schedule and Examinations:** Elliott, Huberich, McFarland, Blichfeldt.
6. **Graduate Study:** Murray, Flügel, Angell, Hempl, Franklin.
7. **Library:** Stillman, C. D. Marx, Kellogg, Fairclough, Adams.
8. **University Publications:** Fairclough, Kellogg, G. H. Marx, Heath, Hempl.
9. **Recommendation of Teachers:** Elliott, Cubberley, Sanford, Hall.

FACULTY AND OTHER OFFICERS

[Name; title; office; office hour; residence; post-office. Post-office in all cases *Stanford University* except where university residence is followed by initial letter of town ('P' indicates *Palo Alto* post-office; 'Mayfield, M.' *Mayfield* post-office; etc.). Street address *Palo Alto* or *Campus* unless otherwise named. Members of the Academic Council are indicated by SMALL CAPS.

'Daily' does not include Saturday. Office hours are daily unless otherwise noted. Brackets indicate 'absent on leave'; the dagger (†) marks the names of men who are married.]

The superior number [1] indicates first semester; [2] indicates second semester.

ABRAMS, L. R., Asst. Prof. Botany, (471) 904 Cowper
†ADAMS, E. D., Prof. Hist., (230 M. 11:15, W. 2:30, F. 12) 9 Alvarado
[2]†ADAMS, T. S., Acting Prof. Econ.,
(221, M. W. F. 9:20-10:20) 1a Alvarado
†ALDEN, R. M., Asst. Prof. Engl. Lit.,
(209, T. 9:15, F. 11-11:15), 427 Embarcadero P
ALLARDICE, R. E., Prof. Math., (70, 10:45-11:15) 19 Salvatierra St.
ALLEN, C. G., Asst. Prof. Rom. Lang.,
(245, M. 11:15 W. F. 12:15) 1235 Webster
Allan, (Mrs.) E. W., Dean of Women,
(203, 10:15-12:30, W. Th. 1:30-2:30) 31 Salvatierra St.
Amick, (Miss) M. E., Asst. History, 10 Salvatierra
†ANDERSON, M. B., Prof. Engl. Lit., (212 M. F. 10:20) Menlo Park
†ANGELL, F., Prof. Psychol., (399, T. Th. 2-3) 1200 Bryant St.
Atherton, (Miss) C. F., Asst. to Registrar, 221 Alma
Atkin, E. G., Instr. Rom. Lang., (245, M. W. F. 11:15) 20 Lasuen St.
†Bahney, L. W., Instr. Metallurgy,
(500, 10:30-4:30) 1080 Emerson St.
Bairos, M. B., Asst. Chemistry, College Terrace
Ballard, C. M., Asst. Library, 8 Salvatierra
Barnett, G. D., Asst. Chemistry, 6 Lasuen
†BASSETT, L. E., Asst. Prof. Elocution,
(211, M. W. F. 11:15) 7 Salvatierra St.
Bateman, W. G., Instr. Chemistry, (24c, 1:30-4:30) 12 Encina
[2]†BERGSTROM, J. A., Prof. Educ., (52, 9:15) 25 Salvatierra
Beyer, F. B., Asst. Chemistry, 6 Lasuen
Bigley, (Miss) W. H., Asst. Library, 255 Lytton
Bille, (Miss) A. M., Asst. English, 170 Waverley St., P

Bille, (Miss) M. E., Asst. Math., 170 Waverley P
†Bingham, J. W., Asst. Prof. Law,
(6, T. Th. 2:30-3:30) 334 Lincoln Ave., P
Blair, J. H., Instr. History, (230, W. 11:15, Th. 2:30) 19 Salvatierra
Blichfeldt, H. F., Assoc. Prof. Math.,
(74, T. Th. 10:15) College Terrace
Bluestone, H., Act. Instr. Rom. Lang.,
(245, M. W. F. 10:15) 11 Alvarado
[1]Bodley, (Miss) G. M., Asst. History, 339 No. 3rd St., S. J., S.
†Boezinger, B., Instr. German, (32 M. W. F. 9:15) 176 Bryant St., P
Boezinger, (Mrs.) S., Asst. Rom. Lang., 176 Bryant St., P
Bohart, G. S., Asst. Chemistry, Encina Hall
Bolton, (Miss) F., Acting Instr. Hygiene,
(M. W. F. 11:15-3-30) 453 Melville Ave., P
†Bonnell, J. K., Instr. English,
(211, M. 10:15, T. 11:15) 1043 Cowper P
Boyd, D. C., Asst. Economics, 172 Encina
[2]Boyle, L. V., Asst. Greek, 111 Encina
Branner, (Miss) E., Asst. History, 13 Alvarado
†Branner, J. C., Vice-Pres. and Prof. Geology,
(332, 8:15-12, 2-5) 13 Alvarado Row
Breer, C., Asst. Mech. Eng., 6 Salvatierra
†Briggs, W. D., Asst. Prof. English,
(207b, T. Th. 10:15) 943 Bryant St., P
Bristol, (Miss) S. B., Asst. to Registrar, (118) 1155 Ramona St.
†Brown, J. G., Asst. Prof. Physics, (385) 1013 Ramona St., P
Buehrer, G. C., Organist, (68) 575 Lincoln Ave.
Burbank, L., Lecturer Bionomics, Santa Rosa
†Burlingame, L. L., Instr. Botany, (429, 10:15-11:15) 20 Alvarado Row
Campbell, D. H., Prof. Botany, (468) 19 Salvatierra St.
†Cannon, H. L., Asst. Prof. Hist.,
(230, T. 9:15, Th. 2-2:30) 19 Alvarado Row
Caswell, A. E., Asst. Physics, 2 Lincoln Ave., S. J., S
†Cathcart, A. M., Assoc. Prof. Law,
(7, M. T. W. Th., 2:30) 1001 Ramona P
Chapman, J. F., Asst. Hygiene, 100 Encina
†Charters, S. B., Jr., Asst. Prof. Elec. Eng., (507, 1:30-4:30) 159 Encina
†Clark, A. B., Assoc. Prof. Drawing,
(314, 8:30, M. F. 1:30-4:30) Hanover St., College Terrace
†Clark, G. A., Pres. Secretary, (112, 9-12:30, 2-5) 7 Alvarado Row
†Clark, G. T., Librarian,
(Lib., 8:30-12:30, 1:30-4:30) Menlo Heights

[1]Cole, W. C., Asst. Physics, 56 Encina
Coonradt, A. C., Asst. Civil Eng., 160 Encina
[†Cooper, W. A., Asst. Prof. German, In Europe]
Coulter, (Miss) E. M., Asst. Library, 5 Salvatierra St.
Coy, O. C., Asst. History, 305 Alma St., P
†Cross, C. N., Instr. Mech. Eng., (504, 1:30-4:30) 385 Waverley St., P
Cross, I. B., Asst. Economics, (222 M. W. F. 8-8:25) 106 Encina
†Cubberley, E. P., Prof. Educ., (51, M. W. F., 11:15) 21 Aibonito Ave.
Cuthbertson, A. M., Asst. Chemistry, 638 Channing Ave., P
†Cutter, L. E., Instr. Mech. Eng., (274) 627 Webster St., P
Dailey, M. E., Lecturer in Education, San Jose
†Danton, G. H., Act. Asst. Prof. German,
(35, F. 10:15) 21 Alvarado Row
[2]Daugherty, R. L., Asst. App. Math., 235 Emerson P
Davidson, P. E., Asst. Prof. Educ., (53 T. Th. 11:15) 10 Lasuen St.
[2]Dean, (Miss) M. M., Asst. Library, 602 Cowper P
†Doane, R. W., Instr. Entomology, (434, 8:15-4) 527 Homer Ave., P
[†Dodge, M. G., Assoc. Librarian, Menlo Heights]
Dole, S. B., Asst. Civil Eng., 11 Lasuen St.
Dorr, H. E., Asst. History, 731 Univ. Ave., S. J., S
†Drew, E. R., Asst. Prof. Physics,
(384, M. W. F., 9:30) 1321 Waverley St., P
Dudley, W. R., Prof. Botany, (464, T. W. 10-12) 222 Kingsley Ave.
†Durand, W. F., Prof. Mech. Eng., (260, 11:15) 2 San Juan St.
†Eckart, W. R., Jr., Asst. Prof. Mech. Eng.,
(503, 1:30-4:30) 1125 Ramona St., P
Ellenwood, F. O., Instr. Mech. Eng., (509, 1:30-4:30) Evergreen Park
†Elliott, O. L., Registrar,
(117, 8:15-12:15; 1:30-4:30, S. 9-12:15) 6 Aibonito Ave.
†Elmore, J., Asst. Prof. Latin, (22 F. 10:15) 1134 Emerson St., P
Evenden, E. S., Asst. Library, 92 Encina
†Ewell, E. R., Asst. Chemistry, 623 Middlefield Road, P
†Fairclough, H. R., Prof. Latin, (22, T. Th. 11:15) 6 Alvarado Row
Field, (Miss) A. R., Asst. Pres. Office, 14 Salvatierra St.
†Fish, J. C. L., Prof. Railroad Eng.,
(269, 10:15-11:15) 1100 Bryant St., P
Fisher, W. K., Instr. Zoology, (441, 8:15-12:30) 221 Kingsley Ave., P
†Flügel, E., Prof. Eng. Philology, (212, T. Th. 9:15) 1153 Cowper St.
Foss, J. H., Instr. Civil Eng., (269, M. T. W. Th. 9:15) 237 Alma St., P
†Foster, B. O., Asst. Prof. Latin, (22, Th. 11:15) 3 Salvatierra St.
†Franklin, E. C., Prof. Chemistry, (35c) 1116 Ramona St.

Franklin, (Miss) May, Asst. Library, 17 Salvatierra
†Gardner, D. C., Chaplain,
(Vestry, T. W. Th. F. 9-12) 1a Alvarado Row
†Gilbert, C. H., Prof. Zoology, (443, 2-3) 433 Melville Ave.
[1]Gilman, H. A., Asst. Hygiene, Encina Hall
Goodhue, (Miss) C., Asst. English, 12 Lasuen St.
†Goodwin, J. E., Asst. Librarian, 11 Alvarado Row
†Gray, H. D., Asst. Prof. Eng.,
(207a, M. W. F. 11:15) 1103 Ramona, P
Gray, (Miss) M. S., Asst. Library, 1 Constanso St.
[Green, (Miss) L. P., Reference Librarian, Ithaca, N. Y.]
†Green, R. L., Prof. Math. (71, 11:15) 13 Salvatierra St.
Gregg, H. C., Asst. Mech. Eng., College Terrace
†Griffin, J. O., Prof. German, (35 T. Th. 10:15) 14 Alvarado Row
†Guérard, A. L., Asst. Prof. Rom. Lang.,
(245, T. Th. 11:15) 37 Salvatierra St.
Hadden, (Miss) E., Asst. Library, 1157 Ramona St., P
Hall, (Miss) A. G., Asst. Library, 628 Gilman St., P
†Hall, H. J., Asst. Prof. Engl.,
(206, T. 2:30, W. 1:30) 209 Addison Ave., P
Harcourt, R. H., Instr. Mech. Eng.,
(Forge, 8:15-4:30, S. 10:15) Salvatierra St.
†Harshe, R. B., Asst. Prof. Drawing, (314, Th. F. 1:30) College Terrace
Hauswirth, (Miss) F., Asst. German, 455 Univ. Ave.
Hays, (Miss) A. N., Classifier Library, 3 Alvarado Row
†Heath, H., Assoc. Prof. Zoology, (436, 11:30) 1147 Ramona St., P
†Hempl, G., Prof. Germanic Philol.,
(32, T. Th. 2:30, M. F. 4:20) 382 Lincoln Ave., P
[2]Henderson, H. F., Asst. History, 375 Kingsley P
Hess, J. S., Asst. Civ. Eng., 76 Encina
Hillebrand, W. A., Instr. Elec. Eng., (506, 11:15) 159 Encina Hall
†Hilmer, H., Instr. German, (35 M. W. 11:15) 243 Cowper St., P
Hohfeld, W. N., Assoc. Prof. Law,
(4 M. T. F., 11:15) 4 Alvarado Row
Hope, E. W., Instr. Greek, (25, 9:15-10) 10 Lasuen St.
†Hoskins, L. M., Prof. Applied Math.,
(275, 11:15-11:45) 365 Lincoln Ave., P
†Howard, B. E., Prof. Pol. Science,
(233, M. T. W. Th. 11:15) 356 Addison Ave., P
†Huberich, C. H., Prof. Law,
(1, T. W. Th. F. 10:15) 318 Lincoln Ave., P
[Hughes, (Miss) F., Cataloguer Library, 1248 Waverley St., P]

Huston, C. A., Asst. Prof. Law, (2, M. T. F. 11:15) 904 Cowper St., P
Hyatt, (Miss) S., Asst. Physics, 67 Roble
Ichahashi, Y., Asst. Econ., College Terrace
James, (Miss) F. S. C., Asst. Library, 15 Salvatierra St.
†JENKINS, O. P., Prof. Physiol. and Histol., (482) 3 Lasuen St.
Johnson, (Miss) E. E., Asst. Hygiene, 375 Hawthorne Ave., P
†JOHNSTON, O. M., Assoc. Prof. Rom. Lang.,
(242, 9) 4 Alvarado Row
†JORDAN, D. S., President, (111, 2-4) Xazmin Hs., Serra Ave.
[1]Jordan, E., Instr. App. Math., (40), 8:15-9:15) 101 Encina
[†KELLOGG, V. L., Prof. Entomol., In Europe]
Kimball, (Miss) A., Asst. English, 8 Lasuen St.
Lanktree, (Mrs.) L. H., Matron Roble Hall, Roble
Lathrop, (Miss) H., Asst. Library, 604 Gilman St., P
†LENOX, L. R., Prof. Anal. Chem., (40c, 2-4) Mountain View
†Lesley, E. P., Asst. Prof. Mech. Eng., (262, 9:15) 22 Alvarado Row
†Liggett, J. B., Instr. Foundry, (8:15-4:30, S. 9:15) 424 Lytton Ave., P
Little, (Miss) M., Asst. Library, 17 Salvatierra St.
†Long, R. R., Instr. Hygiene,
(Gym., M. W. F. 11:15, 4-6; T. Th. 11:15, 5-6) Channing Lane, P
[1]LYON, D. A., Asst. Prof. Metallurgy, Heroult
McCann, E. G., Asst. Hygiene, 44 Encina
MCCLELLAND, J. F., Assoc. Prof. Geology,
(337, 2-4:30) 1001 Cowper St., P
McCracken, (Miss) M. I., Instr. Entomology,
(433, 8:30-12:15) 5 Salvatierra St
†McDowell, J. E., Asst. Registrar, (120, 8:15-4:30) 1 Aibonito Ave
McEwen, G. F., Asst. Physics, 640 Homer Ave., P
†MCFARLAND, F. M., Assoc. Prof. Histol.,
(480 T. Th., 10:15, W. Th. F. 1:30-4:30) 943 Scott St., P
McGregor, E. A., Asst. Sys. Botany, College Terrace
McMurphy, J. I. W., Asst. Syst. Botany, College Terrace
[2]†MACY, J., Acting Prof. Hist.,
(230, W. 2:30-3, Th. 9:30-10) 1a Alvarado
[2]†Maloney, H. W., Asst. Encina Gym., Emerson St., P
†MANNING, W. A., Asst. Prof. Appl. Math.,
(40, T. Th. 9:15) 215 Fulton St.
Marcus, (Miss) L., Asst. Library, 11 Salvatierra St
[†MARTIN, E. W., Asst. Prof. Latin, Reno, Nev.]
MARTIN, (Miss) L. J., Asst. Prof. Psychology,
(401, T. Th. 4) 15 Salvatierra St

Martin, P. A., Instr. European Hist.,
(230, T. 11:15, F. 9:15) 17 Salvatierra St.
†Marx, C. D., Prof. Civil Eng., (271, 8:15) 357 Kingsley Ave.
†Marx, G. H., Assoc. Prof. Mech. Eng., (274, 9:15) 356 Lincoln Ave.
[2]Marx, R. G., Asst. Physics, 357 Kingsley
†Matzke, J. E., Prof. Rom. Lang.,
(242, M. W. Th. 3.30, T. 2:30) 1211 Bryant St.
Meston, A. F., Asst. Hygiene, 132 Encina
Miller, J. M., Asst. Entomology, College Terrace
[†Millis, H. A., Asst. Prof. Economics, 751 Channing Ave.]
†Mitchell, J. P., Instr. Chem., (5c, 1:30-4:30) 235 Embarcadero Road
Mitchell, S. B., Asst. Library, 10 Alvarado Row
Mobley, (Miss) B. J., Asst. Library, 619 Webster St., P
Moore, (Miss) E., Asst. English, 6 Roble
Moreno, H. C., Asst. Prof. Applied Math.,
(40, 11:15-11:25) 1235 Webster
Morris, C. S., Asst. Entomology, 40 Encina
†Moser, C., Instr. Civ. Eng., 651 Homer P
Motley, J. M., Asst. Prof. Polit. Science,
(219, M. 10:15) 611 Waverley St., P
[1]Mott, A. G., Asst. Elec. Engineer, 53 Encina
†Moulton, E. W., Asst. Hygiene, 336 Middlefield
†Murray, A. T., Prof. Greek,
(25, M. W. 10:25-11:15) 1019 Bryant St.
Nagel, (Miss) L., Asst. to Registrar, 1 Aibonito Ave.
Nason, (Miss) K. B., Asst. History, 1 Constanso
†Newcomer, A. G., Prof. English,
(209, M. W. Th. 10:15) Forest Court, P
†Newsom, J. F., Assoc. Prof. Mining, (339, 8-12, 2-5) 1129 Cowper P
†Palmateer, T. J., Instructor Machine Shop, (8:15-4:30) Mayfield, M
Park, (Miss) H., Asst. Drawing, 16 Alvarado Row
Partridge, J. S., Lecturer in Law, Flood Building, San Francisco
Patterson, (Miss) E. W., Asst. Hygiene, 15 Roble
Patterson, (Miss) L., Asst. Library, 604 Gilman St., P
†Peirce, G. J., Assoc. Prof. Botany, (466, W. 2:30) 281 Embarcadero
†Peterson, H. C., Curator Museum, 672 Homer Ave., P
[2]Porter, W. S., Asst. Library, Encina
Poindexter, R. W., Asst. Chemistry, 147 Encina
Post, F. D., Asst. to Registrar, Encina
Post, (Miss) M. A., Asst. Dept. Geol. & Mining, 515 Everett Ave., P
†Price, G. C., Assoc. Prof. Zool., (446) 5 Alvarado Row

Price, H. L., Asst. English, 66 Encina
Provines, (Miss) C. D., Asst. Library, 11 Salvatierra St.
Pruett, J. F., Asst. Physiology, 180 Encina
Ram, H., Asst. German, Evergreen Park
Randall, C. A., Asst. Civ. Eng., 109 Encina
Randall, (Miss) J. L. D., Asst. Botany, College Terrace
Randall, (Miss) W. R. D., Asst. Hygiene, College Terrace
†Rendtorff, K. G., Asst. Prof. German,
(32, T. Th. 9:15) 1130 Bryant St., P
Reynolds, L. B., Asst. App. Math., 712 Bryant St., P
Richardson, R. E., Instr. Bionomics,
(428, T. Th. 9-11, F. 2-4) 635 Bryant
Rice, E. W., Asst. Chemistry, 9a Salvatierra St.
[2]Rich, W. H., Asst. Zoology, 19 Alvarado
†Rogers, A. F., Asst. Prof. Mineralogy,
(362, M. T. W. Th. 10:15) 727 Cowper St., P
†Rogers, F. J., Assoc. Prof. Physics, (381) 4 Lasuen St.
†Rolfe, H. W., Associate Prof. Greek, (25. M. W. F. 9) Menlo Heights
Ross, P. A., Asst. Physics, 157 Encina
Rossiter, (Miss) M., Asst. Library, 15 Lasuen St.
Russell, (Mrs.) T. P., Instr. English, (206, T. Th. 11:15) 12 Lasuen
[2]Rust, E. W., Asst. Entomology,
†Ryan, H. J., Prof. Elec. Eng., (505, 3-4) 9 Santa Inez St.
†Sabine, G. H., Asst. Prof. Philosophy,
(417, M. 3-4, F. 9-10) 818 Kipling St., P
†Sanford, F., Prof. Physics, (382) 450 Kingsley Ave.
Sawyer, E. W., Asst. Civ. Eng., 157 Encina
†Searles, C., Asst. Prof. Rom. Lang.,
(W. F. 9:15-11:15) 1027 Emerson St., P
Sears, J. B., Asst. Education, 1527 Waverley St., P
Seward, S. S. Jr., Asst. Prof. Engl.,
(208, W. 3:30, Th. 11:15, F. 10:45) 262 Kingsley Ave., P
Sherfy, S. H., Asst. Botany, 20 Alvarado Row
[Show, A. B., Prof. Europ. Hist., In Europe]
†Skinner, M. M., Asst. Prof. German, (32, T. 10:15) 10 Alvarado Row
†Sloan, W. H., Instr. Chemistry, (49c. 1:30-4:30) 330 Waverly St., P
†Slonaker, J. R., Asst. Prof. Physiology,
(481, M. T. Th. F. 10:30) 334 Kingsley Ave., P
†Smith, J. P., Prof. Mineral. and Paleon.,
(329, 2-5) 1335 Cowper St., P
[1]Smith, R. G., Asst. Civ. Eng., 13 Encina

†Snow, W. F., Assoc. Prof. Hygiene, (95, 9:15) 12 Alvarado
†Snyder, J. O., Asst. Prof. Zool., (423, 2-5) 461 Addison Ave.
Spencer, (Miss) E. J., Asst. Latin, 233 Addison Ave., P
Staber, E. H., Asst. Chemistry, 334 Waverley St., P
†Stanley, E. J., Instr. Woodworking,
(500, 8:15-4:30) 269 Hawthorne Ave., P
Starks, (Mrs.) C. L., Instr. Drawing,
(Studio, T. W. Th. F. 1:30-4:30) 1115 Ramona St.
†Starks, E. C., Asst. Prof. Zoology,
(426, 1:30-4:30) 1115 Ramona St.
Steel, D., Asst. Geol. and Mining, 742 Bryant P.
†Stillman, J. M., Prof. Chem., (44c, 2-5) 2 Alvarado Row
Stoltenberg, (Miss) C. S., Asst. Prof. Physiology,
(485, W. Th. F. 1:30-4:30) 7 Alvarado Row
†Stuart, H. W., Assoc. Prof. Philosophy,
(416, M. 2-4, Th. 10-12) 765 Channing Ave., P
†Suter, J. D., Instr. Applied Math., (40, T. Th. 9:15) 35 Salvatierra St.
Sutliff, (Miss) H. B., Asst. Library, 15 Salvatierra St.
†Swain, R. E., Assoc. Prof. Chem., (41c, 2-4) 638 Channing Ave., P
Swift, (Miss) M. V., Asst. Pres. Office, 2 Salvatierra St.
Taggart, A. F., Asst. Applied Math., 192 Encina
Talbot, S. J., Asst. Library, 80 Encina
Taylor, N., Asst. Civ. Eng., 6 Lasuen St.
Theile, W. C., Asst. Dept. Mech. Eng., 8 Salvatierra St.
Thompson, J. I., Asst. Mech. Eng., 128 Encina
†Townley, S. D., Asst. Prof. Applied Math.,
(40, 11:15-11:30) 33 Salvatierra St.
Townsend, (Miss) V., Acting Instr. Roble Gym.,
(Gym., M. W. F. 11, 4-5) 414 Bryant St., P
[Treat, P. J., Instr. Hist., Cambridge, Mass.]
Turner, F. W., Asst. Geol. and Min., 6 Salvatierra St.
†Uhlman, W., Engineer, 420 Emerson St., P
Upson, B. W., Asst. Civil Eng., 18 Lasuen St.
†Veblen, T. B., Assoc. Prof. Econ., (221, M. W. 12:15) 21 Alvarado
†Ware, S. L., Instr. History,
(230, M. 10:15, W. 3:30) 17 Salvatierra St.
Weymouth, F. W., Asst. Physiology, 32 Encina
Wheeler, R. B., Asst. Library, Encina Hall
†Whitaker, A. C., Assoc. Prof. Econ.,
(220, 9:15, 10:15) 151 Embarcadero Road
Wiggins, J. H., Asst. Library, 142 Encina

†Wing, C. B., Prof. Struct. Eng.,
(278, 11:15-12:15) 345 Lincoln Ave., P
Wood, B., Asst. Pres. Office, 1757 Waverley P
2†Woodburn, J. A., Acting Prof. Hist.,
(230, M. 11:15, W. 4-5) 1a Alvarado
Woodruff, (Miss) M. J., Stenog., Library, Mountain View, M
†Woodward, F. C., Prof. Law, (3, 11:15) 904 Cowper St., P
†Young, A. A., Prof. Econ.,
(222, M. W. F. 10.30-11, Th. 2:30-3:30) 1129 Emerson St.
†Young, S. W., Prof. Physical Chem., (46c, 9-12, 4-6) 360 Kingsley Ave.

BUSINESS OFFICE

Ames, E. M., Voucher Clerk.....8 Alvarado
Bain, A. J., Supt. Construction.....1139 Ramona
Beebe, H. W., Office Manager.....21 Lasuen
Blodgett, D. P., Bookkeeper.....900 Waverly
Hadden, (Miss) F., Stenographer.....1157 Ramona St.
Kinstein, C. A., Clerk.....718 Bryant
Knight, Allen, Auditor.....502 California St., S. F.
Lathrop, C. G., Treasurer and Business Manager.....Alta Vista
Monasch, D., Purchasing Agent.....Union Trust Building, S. F.
Rich, S. H., Cashier.....1158 Ellis St., S. F.
Peters, C. R., Storekeeper.....900 Waverly
Dorgan, M. H., Chief Plumber.....Mayfield
Freedman, S., Foreman.....Mayfield
Gaines, C. A., Chief Electrician.....Palo Alto
Garrity, M. J., Labor Foreman.....Palo Alto
Hughes, C. P., Chief Engineer.....Cooksey Lodge
Miller, C. F., Chief Gardener.....315 Lytton Ave.
Quinn, A. A., Clerk Encina.....Ramona St.
Scott, T. B., Storekeeper of Chemical Laboratory.....Mayfield
Schilling, J. C., Chief Carpenter.....Palo Alto
Stevens, F. A., Foreman Mechanician Shop.....430 Tasso St.
Tulley, P. J., Chief Painter.....Menlo Park
Witherell, J. S., Farm Superintendent.....Stanford University

STUDENTS

Name; home residence; major subject; status; University residence; post-office. Post-office in all cases *Stanford University* except where university residence is followed by initial letter of town ('P' indicates *Palo Alto* post-office; 'Mayfield, M,' *Mayfield* post-office; etc.) Street address *Palo Alto* or *Campus* unless otherwise named.

Status—gr., graduate student; sp., special student. The figures after major subject indicate the number of units of university work completed (and counting toward the 120 units required for graduation), no account being taken of 'deferred,' 'incomplete,' or 'conditioned' work. The dagger (†) indicates unadjusted standing from other colleges and universities. (Phys.=Physics; Phyl.=Physiology.)

The superior number [1] prefixed to the name of a student indicates registration for the first semester only. [2] indicates second semester only.

Abel, Edson Cronk : Whittier, Pre L., 10 — 11 Alvarado
Abright, William Worden : Palo Alto, C. E., 93, — 651 Waverley P
Acheson, Barbara Katherine : Eureka, Math.gr., — DeltaDeltaDelta
A. B., Stanford, 1909.

[2]Achi, William Charles : Honolulu, H. T., Pre L., — 656 Bryant
Acker, Frank V. : San Francisco, C. E. sp., 44, — 36 Encina
Adam, Edward Niles : Bigtimber, Mont., E. E., 27, — 318 Emerson P
[1]Adams, Eleanor Pitchlynn : Long Beach, Engl., 38, — Walden
[1]Adams, Fred'k Archibald : San Francisco, Pre L. 53, — 139 Encina
Adams, Olga : Los Angeles, Hist., 89, — Pi Beta Phi
Adams, Raymond Stewart : Monrovia, Geol., 12, — Homerian Hall
Adams, William Welsh : Palo Alto, Geol., 106, — 179 Encina
Ainsworth, Howard D. : Min'ap'l's, Minn., Geol., 92, — S. Alpha Epsilon
Akins, Charles Frederic : Redlands, C. E., 34, — 39 Encina
Alderton, Dorothy Marion : Brooklyn,N.Y., Engl., 7, — Pi Beta Phi
[1]Alexander, Jeanette W. : Susanville, Hist., 38, — 2 Madrono
Allen, Harvey Abner : Astoria, Ore., E. E., 20, — Kappa Alpha
Allen, Howard Frank : Stockton, Hist., 41, — 156 Encina
Ambrose, Oliver Stephens : Lockeford, E. E., 93, — 192 Encina
Ames, Lucile Eugenia : Palo Alto, Span., 8, — 16 Alvarado
Amick, Myrtle Elizabeth : Oceanside, Hist. gr., — Delta Delta Delta
A. B., Stanford, 1908.

Anderson, Fred'k. Pope : Grosse Ile, Mich., Frn., 49, — 37 Salvatierra
Anderson, Laurine : Carson City, Nev., Engl., 11, — 58 Roble
[1]Anderson, Morris D. : Palo Alto, C. E. sp., 6, — 705 Cowper P
Anderson, Robert Van Vleck : Menlo Pk., Geol. gr., — Menlo Park
A. B., Stanford, 1906.

Andresen, Ludwig Paul : Portland, Ore., Geol., 12, — Welakahao Club

[1]Andrews, Frank Elmer : Colton, C. E., 62, 22 Encina
Andrews, Jesse Lee : Los Angeles, Econ., 37, Villa de Lag'nta
Arakawa, Santaro : San Francisco, C. E., 35, 227 Encina
Ardzrooni, Leon : Fresno, Econ., 89, Faculty Club
Argabrite, Clarence Cannon : Ventura, E. E., 14, 647 Lytton P
Argabrite, John Jay : Haywards, E. E., 12, 647 Lytton P
Arnold, Clement Harrisse : San Francisco, Engl., 63, 16 Salvatierra
Arrell, Dell Bernie : Moline, Ill., Geol., 57, Phi Gamma Delta
[2]Arrell, James Lee : Oakland, M. E., Phi Gamma Delta
Ashley, Freeland Hightower . Altadena, Eng., 91, 351 Homer P
Atkinson, Arthur Garret : Palo Alto, C. E., 33, 315 Melville P
Atkinson, Irving Marshall : Palo Alto, C. E., 48, 315 Melville P
Atwood, Clarence Goodrich : Los Angeles, Law gr., 430 Kingsley P
A. B., Stanford, 1907.

[1]Ayer, Willard Melbourne, Mountain View, E. E. sp., 3, Redwood City R
[1]Bachelder, Robert Boyd : San Francisco, E. E., †2, 16 Salvatierra
[2]Bachrodt, Walter Lewis : San Jose, Hist., 956 S. 6th, S J, S
[1]Bacon, Cora Angeline : San Jose, Hist., 42, 5 Roble
[2]Bagley, Flora : San Francisco, Latin, 871 Church, S F, S
Bailey, Leslie Eugene : Escondido, M.E.sp., 8, Villa de Lag'nta
[1]Bailiff, Julia May : Banning, Engl. gr., 24 Roble
A. B., Stanford, 1908.

Bairos, Manuel Benjamin : Biggs, Chem., 106, Welakahao Club
Baker, Samuel Carleton : San Jose, Law, 9, 201 Waverly P
Baker, Thomas Childrey : Los Angeles, Geol., 105, Encina Hall
Ball, Bertrand Logan : Los Angeles, Econ., 31, Kappa Sigma
Ball, Carroll Doyle : San Jose, C. E., 12, 275 S. 9th S J, S
Ballard, Carl McNeilan : Seattle, Wash., Econ., 36, Delta Upsilon
Balsbaugh, Mary Alice : Palo Alto, Lat. gr., 718 Webster P
A. B., Stanford, 1908.

Banta, Earl Lott : Imperial, Econ., 33, 201 Waverly P
Barbur, LeRoy Wright : Los Angeles, C. E., 104, 109 Encina
Bardin, Hazel Jane : Salinas, Draw., 75, 16 Roble
Bargar, Margaret Elizabeth : Rosamond, Psych. gr., College Terrace
B. S., Rockford College, 1894.

Barker, Gem Lee : Santa Ana, Engl., 75, 10 Roble
Barker, Kathleen Mary : Los Angeles, Engl., 12, 70 Roble
Barkley, William Sherritt : Los Angeles, Pre L., 100, Sigma Nu
Barlow, Maybelle Bertha : Los Angeles, Hist., 62, K. A. Theta
[1]Barnes, Katharine Whitney : Oakland, Econ., 23, Walden
Barnett, George De Forest : Santa Rosa, Chem. gr., Phi D. Theta
A. B., Stanford, 1906.

Barnett, George Ingham : San Francisco, Geol., 10, 318 Emerson P
Barnhart, Della Carra : Coyote, Engl., 64, Gamma Phi Beta
[1]Barrow, Frank Elliott : Los Angeles, Pre L., 18, 113 Circle P
[2]Bateman, William George, S. Lake Cy., U., Chem. gr., 12 Encina
A. B., Stanford, 1907.
Bates, Marie Alice : Chevy Chase, Md., Engl., 9, Delta Gamma
[1]Bates, Callie Hildred : Lawrence, Germ. gr., Lawrence L
A. B., Stanford, 1908.
Batkin, Paul Jay : Riverside, Pre L., 66, 85 Encina
Batterson, Sheldon Morse : Pasadena, Pre L., 53, Delta Upsilon
Baugh, Arline : San Jose, Engl., 10, 6 Madrono
Baugh, Lucile Sumners : San Jose, Hist., 39, 6 Madrono
Bayley, J. Garfield : Toowoomba, Aust., Educ., 100, 35 Encina
[1]Bayly, Roy Downer : Los Angeles, Econ. † 3, Sigma Chi
Bazet, Emma Rosalie : San Francisco, Frn., 49, Madrono
Beach, Frederick H. : Mt. Hermon, Mass., Engl., 44, 626 Gilman P
Beal, Ralph Raymond : Palo Alto, E. E., 15, 635 Bryant P
[1]Beard, Grace Rachel : Minneapolis, Minn., Germ., 118, G. Phi Beta
Beard, Harold Wilcox : Hutchison, Kan., Econ., 83, Beta Theta Pi
Beardslee, Joseph Newton : Azusa, Pre L., 11, 344 Emerson P
Beaufait, Allen Francis : Glendale, Engl., 34, 1121 Bryant P
Beaver, Ella Wissie : Tulare, Hist., 15, 16 Alvarado
Beckley, Reuben Elmer : Ukiah, M. E., 77, 22 Encina
[2]Bee, Charles Everett : Cupertino, C. E., 71, 133 Encina
Beeger, Lulu : Redwood City, Germ., 75, Walden
[1]Beeger, Pauline Marie : Redwood City, Phyl. gr., Redwood R
A. B., Stanford, 1909.
[2]Beharrell, Helen Elizabeth : Seattle, Wn., Frn., 66 Roble
[2]Behrens, Edna Mabel : Redding, Engl. †., 401 Webster P
Belieu, Virgil Ray : Compton, Pre L., 52, 134 Encina
Bell, John Henry : Palo Alto, Geol., 84, 620 Gilman P
Bell, Linda May : St. Helena, Hist., 52, La Camaraderie
Bellows, Virgil Franklin : Cleveland, O., Econ.,79, Phi Gamma Delta
Beman, John Burris : Los Angeles, Pre L., 16, Beta Theta Pi
Bennett, Gareld Eaton : Long Beach, Pre L., 9, Phi Gamma Delta
Bennett, Rose Margaret : San Diego, Math., 16, 49 Roble
[2]Bennett, Thomas T. : Marshfield, Ore., Pre L., 105, Sigma Chi
[3]Benson, Carl Henry : Redlands, M. E., 48, 49 Encina
Berger, Alice Ruth : San Jose, Chem. gr., 73 N. 6th S. J. S
A. B., Stanford, 1908.
Berry, Samuel Stillman : Redlands, Zool., 108, 100 Encina

Bevier, George, Jr. : Spokane, Wash., Chem., 51, 78 Encina
Beyer, Forrest Baker : Kendallville, Ind., Chem. gr., Phi Delta Theta
A. B., Yale University, 1908.

Bianchi, Adolphus Benjamin : Cambria, Pre L., 64, 88 Encina
[1]Bickel, Basil Fritz : Chicago, Ill., Econ., 29 Phi Gamma Delta
Biethan, Leonore Louise : Blackfoot, Ida., Chem., 58, 567 Forest ave P
Bille, Anna Matilda : Palo Alto, Engl. gr., 170 Waverley P
A. B., Stanford, 1908.

Bille, Elsa Margaret : Palo Alto, Eng., 48, 170 Waverley P
Bille, Mary Elizabeth : Palo Alto, Math. gr., 170 Waverley P
A. B., Stanford, 1908.

Billwiller, Ernest Oswald, New York, N.Y., C. E. † 17, 139 Encina
Binder, Hazel Mignon : Alameda, Engl., 108, Delta Delta Delta
Binkley, Tholow : Hollister, Phyl., 61, 536 Ramona
Binns, Clyde Arthur : Sandusky, O., E. E., 102, Cong. Church P
Birch, Catherine Ida : Redlands, Lat., 44, La Camaraderie
Bissell, Harvey Sutherland : Pasadena, Chem., 13, D.Kappa Epsilon
[1]Blake, George Albert : Palo Alto, Geol. sp., 15, 411 Lytton P
[1]Blanchard, Emma : San Jose, Engl., 23 Roble
Blanchard, Leslie : Sacramento, Engl., 15, Delta Delta Delta
Bland, Lotta L. : San Jose, Phyl., 45, 29 Roble
Blee, Clarence Earl : Santa Ana, C. E., 107, 214 Emerson P
Blee, Harry Harmon : Santa Ana, M. E., 105, 214 Emerson P
Bliven, Bruce Ormsby : Santa Cruz, Engl., 39, 2 Encina
Block, Florence Hutchins : San Francisco, Hist., 7, Alpha Phi
Blodget, Ruth : Bakersfield, Hist., 105, Delta Delta Delta
Blood, Walter William : Denver, Colo., Pre L., 106, Sigma Nu
Bluestone, Henry : Pittsburg, Pa., Rom. Lang. gr., 11 Alvarado
A. B., Harvard University, 1907.

Boal, Helen Dickinson : National City, Engl., 31, Walden
Bodley, Ella Mina : Palo Alto, Germ., 16, 353 Lytton P
[1]Bodley, Grace Majella : San Jose, Hist. gr., 339 N. 3rd S. J. S
A. B., Stanford, 1907.

Bohart, George Shambaugh : Clinton, Ia., Chem., 53, 191 Encina
Bolin, John Siegfried : San Jose, Educ., 86, 356 S.3rd S J, S
[2]Bonnell, Cornelia : Palo Alto, Phyl.sp., 136, 370 Add'nAv,P
[1]Boothe, Genevieve : Colton, Engl. gr., 18 Roble
A. B., Stanford, 1908.

Borland, Oral William : San Bernardino, C. E., 45, 97 Encina
Borland, Robert H. : San Bernardino, Law gr., 121 Encina
A. B., Stanford, 1909.

[1]Borough, Edwin Wallace : San Francisco, C. E. gr., 79 Encina
A. B., Stanford, 1909.

Bose, Surendra Mohan, Calcutta, India, Chem.,† 18, Cosmopolitan Cl
Bostwick, Stewart Ashley : Mill Valley, Pre L., Theta Delta Chi
Bothwell, Earle Lewis : San Jose, E.E.,14, DeltaKappaEpsilon
Bothwell, Zayda Edith : Salt Lake City, U., Germ., 77 Delta Delta Delta
Boudinot, Edward Elias : Escondido, C. E., 40, 190 Encina
Boundey, Elwin James : San Jose, Geol., 41, 57 Moorp'k, S J,S
[2]Bower, Albert Gordon : S. Lake Cy., Utah, Phyl., Sigma Chi
Bower, Italja Mercedes : Los Angeles, Hist., 12, Madrono
Boyd, DeEstraye Cassell : San Jose, Econ., 109, 172 Encina
Boyd, Harold Edward : Milpitas, Geol., 45, 93 Encina
[1]Boyers, Luther Musson : Decatur, Ind., Engl., 77, 207 Hawthorne
Boyle, John Clarendon : Escondido, Econ., 99, College Terrace
Boyle, Lewis Vincell, Jr. : Escondido, Econ., 103, 111 Encina
Boyle, Margaret Louise : Escondido, Engl., 28, 319 Addison P
Boyle, William Archdall : San Rafael, Econ., 21, 11 Alvarado
Bradford, Clarkson Beem : Ottawa, Ill., Econ., 65, Phi Delta Theta
Bradley, Clarence Linn : Visalia, E. E., 97, 66 Encina
[2]Bradley, Helen : Palo Alto, Span., 630 Lincoln P
Brady, Emmet James : Columbia, Phyl., 71, 158 Encina
Brainerd, Gertrude Gardner : Los Angeles, Engl., 75, Gamma Phi Beta
Branner, Elsie : Stanford Univ., Hist. gr., 13 Alvarado
A. B., Stanford, 1908.

Brassy, Lucien Peter : San Jose, M. E., 77, 344 Al.Rk.,S J,S
Brayton, Martha Jane : Logan, Ia., Engl., 20, 269 Addison P
[1]Brazell, James Coleman : Belmont, Pre L. 5, Phi Kappa Psi
Breer, Carl : Los Angeles, M. E., 111, S. Alpha Epsilon
[2]Bretherton, Howard Prescott : L. Angeles, Pre L., Beta Theta Pi
Brinton, Margaret : San Diego, Math., 106, 14 Salvatierra
Brinton, Walter Franklin, Bradford, Pa., C. E., 36, 109 Encina
[2]Bristol, Percy W. : San Mateo, Chem. gr., Phi Kappa Psi
B. S., Brooklyn Polytechnic Institute, 1901.

[1]Britton, Raymond Morris : Lawrence, Hist. gr., Lawrence L
A. B., Stanford, 1907.

Brohaska, Catherine Margaret : San Jose, Engl. gr., 124 Delmas, S.J. S
A. B., Stanford, 1908.

Brooke, Robert Dunbar : Spokane, Wash., E. E., 106, Phi Kappa Psi
Brower, Irving King : Bakersfield, Pre L., 100, 57 Encina
Brown, Albert Skillman : Mendocino, C. E., 11, Lotus Club P
Brown, Earl Daniel : Campbell, C. E., 47, 3 Encina

[2]Brown, E. Call : Los Angeles, Geol. sp., Mariposa Hotel
Brown, Eltinge Thornton : Los Angeles, Econ., 9, Zeta Psi
[2]Brown, Floyd Cromwell : Selma, E. E., 14, Encina
[1]Brown, Harold Ralph : San Francisco, Pre L. 108, 115 Encina
Brown, Harry Edgar : Sacramento, Econ., 36, Kappa Sigma
Brown, Roger Houssels : Duarte, C. E., 56, Theta Delta Chi
Brown, Samuel Windsor : San Jose, Educ. gr., 423 S. 7th, S. J. S
A. B., Stanford, 1907.
Browne, Mae : Rhinelander, Wis., Germ., 108, Delta Gamma
Browning, Aaron Percival : Santa Barbara, C. E., 12, 202 Encina
Brownlie, Margaret Edith : Vallejo, Lat., 14, Madrono
Brunton, Mary Cecelia : Salt Lake City, U., Engl., 103, Pi Beta Phi
Bryan, Barnabas : Anacostia, D. C., Geol., 106, 89 Encina
[1]Bryan, Norris Pinkney : Anacostia, D. C., Law, gr., 89 Encina
A. B., Stanford, 1908.
Bryan, Samuel : Anacostia, D. C., Econ., 83, 85 Encina
Bubb, John Boulware : Palo Alto, M. E., 62, 731 Hamilton P
Buchan, Dean Winslow : Waterloo, Ia., Chem., 95, 832 Kipling P
Buckingham, Elisabeth Lee : Palo Alto, Engl., 85, 1143 Webster P
Buell, Henry H. : Stockton, E. E., 111, 25 Encina
[2]Buffum, George Mitchell : Palo Alto, Geol., 351 Homer P
Buker, Earl Leroy : Sand Point, Idaho, E. E. sp., 14, Mayfield
[1]Bulfinch, Constance Irene : Los Angeles, Hist.,† 7, 22 Lasuen
Bundy, Sarah Elizabeth : Los Angeles, Engl., 66, Gamma Phi Beta
Burbank, Daniel Wellman : Oakdale, Pre L., 101, 127 Encina
Burgren, Arthur William : San Francisco, Geol., 85, Acacia
Burgunder, Rob't Marcus : Colfax, Wash., Pre L., 74, 707 Bryant P
Burke, Grace Lilian, : Los Angeles, Engl., 10, Alpha Phi
Burke, Mabel Claire : Palo Alto, Draw., 104, 603 Lytton P
Burkhalter, Frances Cleveland : Los Ang., Hist., 66, K. K. Gamma
[2]Burlingame, Arthur Allison : San Fran., Phyl.,sp., 920 Brod'k, S.F.,S
[2]Burmaster, Huston W. : Muncie, Ind., Chem., 219 Ramona P
Burns, Anna Catherine : Deeth, Nev., Engl., 53, 69 Roble
Burr, Clyde Russell : Monrovia, Pre L., 28, 193 Encina
Burrell, Florence Cotton : Oakland, Ent., 64, K. A. Theta
[1]Burrell, Logan : Portland, Ore., Geol., 8, 7 Encina
Burtt, Payson Dodge : Oakland, Geol., 114, 13 Encina
Bush, George Barnard : Riverside, Pre L., 102, 90 Encina
[1]Bushnell, Asa Nash : San Diego, Law sp., 17, Zeta Psi
[1]Caddagan, Donald C. : Los Angeles, Econ., 17, Delta Tau Delta
Cadwalader, Theodore Royer : Los Ang., Econ., 58, Beta Theta Pi

Calderwood, Everett Morse : Palo Alto, E. E., 5, 531 Cowper P
Camp, William Roswell : Palo Alto, Econ., 97, 559 Cowper P
[1]Campbell, Clarence P. : Los Angeles, M. E., 13, 419 Lytton
[1]Campbell, Elliott Davidson : Chicago, Ill., C. E., † 10, 750 Bryant P
Campbell, Helen : Palo Alto, Hist., 43, 370 Embarc P
Campbell, Helen Violet : El Centro, Hist. gr., 521 Everett P
A. B., Pomona College, 1907.

Campbell, Homer Ward : San Jose, Educ., 69, Homerian Hall
Canterbury, Ellison Robbins : Redlands, Phyl., 9, Theta Delta Chi
[1]Canterbury, Harry Horton : Redlands, M. E., 66, 49 Encina
Carden, Lester Lincoln : Santa Ana, Econ., 35, Kappa Alpha
Carpenter, Mark A. : Ukiah, Pre L. 27, 161 Encina
Carpenter, Walter Irving : Redlands, E. E., 14, Welakahao Club
Carraher, Mortimer Bybee, Seattle, Wash., Pre L., 2, Phi Delta Theta
Carson, Marion Vroom, : Palo Alto, Engl., 64, 181 Addison P
[2]Carson, Merwin Bishop : Palo Alto, C. E., 22, 181 Addison P
[1]Carter, John Noble : Cave City, Ky., Pre L., 31, 549 Cowper P
Carter, Russell Brace : Los Angeles, Pre L., 13, Delta Upsilon
Cary, Edward Guilford : Palo Alto, Phyl. sp., 60, 158 Encina
Case, Alexander Truman : Corning, C. E., 68, Sigma Nu
Case, Eunice : Kalama, Wash.., Lat., 14, 15 Roble
[1]Case, Inez : Kalama, Wash., Engl., 95, 50 Roble
[1]Case, Josephine : Los Angeles, Frn., 11, Delta Gamma
Case, Mabel : Kalama, Wash., Zool., 75, 15 Roble
Cashbaugh, William Augustus : Bishop, Geol. sp., 100, 46 Encina
Caswell, Albert Edward : San Jose, Phys. gr., 9, Lin'c av,S J,S
A. B., Stanford, 1908.

Cecil, Neil McComas : Modesto, C. E., 14, 625 Hamilton P
Chamberlain, Kendrick : Los Angeles, Pre L., 34, Delta Upsilon
Chamberlin, Cora Era : San Leandro, Engl., 109, 26 Madrono
Chao, Chang-Kwang : Hangchow, China, Econ., 101, 318 Lytton P
Chapin, Theodore : Los Angeles, Geol., 106, 1248 Waverly
B. S., Occidental College, 1908.

Chapman, Alice Louise : Redlands, Frn., 84, 27 Roble
[1]Chapman, John Frye : Redlands, Pre L. gr., 100 Encina
A. B., Stanford, 1909.

Chase, Elmer Ellsworth, Jr. : San Jose, Geol., 38, Zeta Psi
Cheda, Gilbert Ernest : San Luis Obispo, Geol., 42, 133 Encina
[1]Cheda, Henry Prosper : San Luis Obispo, Geol., 44, 133 Encina
Cheney, Everett Wethered : Reno, Nev., Pre L., 42, 5 Lasuen
Childs, Grace : Redlands, Hist., 14, Gamma Phi Beta

Chislett, Will : Los Angeles, Engl. sp., 7, 5 Lasuen
Christensen, Carlo P. : Whitefish, Mont., E. E., 56, 318 Emerson P
Christin, Charles Alfred : San Francisco, Pre L., 50, 170 Encina
Chuck, Albert H.-S. : Heung-Shan, China, C. E., 48, Stanford Resid.
Clark, Claudia L. : Redlands, Hist. gr., Madrono
A. B., Stanford, 1908.
Clark, Edna Ellita : Ventura, Hist., 40, 21 Madrono
Clark, Eldred James : San Jose, Econ., 94, Minn. av. S J, S
Clark, Eva Belle : Fresno, Germ., 71, Pi Beta Phi
Clark, Gladys Willamary : Gilroy, Draw., 40, La Camaraderie
[2]Clark, Lester Percy : Redlands, M. E., 19, 187 Encina
[2]Clark, Neil Coffin : Prescott, Arizona, Pre L., 16, Encina
Clark, Vernon Albert : Alameda, Chem., 7, 5 Lasuen
Clarke, Effie May : Riverside: Educ., 97, 219 Addison P
Clarke, James Maxwell : Palo Alto, M.E.,115, Ch'hill&Bryant P
[1]Clarke, Julian Fairfield : Palo Alto, Pre L. 60, Ch,hill & Bryant P
[1]Clay, Mabel Adalene : San Francisco, Hist, 81, 25 Madrono
Clifford, Hazel Grant : Burlingame, Zool., 23, Burlingame
Clift, Helen Miller : Tacoma, Wash., Hist., 24, 19 Madrono
Cline, William Henry : Los Angeles, Econ., 12, Phi Delta Theta
[1]Clowe, Charles Edward : Woodland, Geol., 54, Phi Gamma Delta
Clyde, Robert William : San Francisco, C. E., 11, Kappa Alpha
Cobert, Albert : Chicago, Ill., Germ. gr., Kappa Sigma
A. B., Stanford, 1909.
Coburn, Albert Charles : Stanford Univ., Hist. sp., 49, Marchm't Club
Cochran, Lex Hugh : San Bernardino, M. E., 75, Phi Delta Theta
Coddington, Albert A. : San Bernardino, M. E., 44, 97 Encina
Coe, Arthur Frederic : Los Angeles, Pre L., 109, 4 Encina
Coffey, Charles E. : San Jose, Pre L., 6, 186 Encina
[2]Coffin, Ethelbert L. : Salt Lake Cy., Utah, Geol., 19, Phi Kappa Psi
Cogswell, Jessie Flavia : Riverside, Lat. gr., 23 Madrono
A. B., Stanford, 1909.
Cohen, William B. : Cleveland, Ohio, Engl., 10, 143 Encina
[1]Cole, Amos Newton : DuBois, Penna., Chem.,108, S. Alpha Epsilon
Cole, Waldo Carnahan : Stanford Univ., E. E., 96, 56 Encina
[1]Coleman, Clifford Cresco : Cupertino, Geol., 3, Cupertino, C
[1]Coleman, Jacob : Palo Alto, Pre L., 39, 327 Emerson P
Coleman, Thomas Lynch : Los Angeles, Pre L., 12, D.Kappa Epsilon
Collier, Alice Honeyman : Portland, Ore., Grk., 65, Walden
[1]Collins, Lois Ella : Los Angeles, Hist., 5, 1 Alvarado
[1]Collins, Wallace Chase : Mill Valley, Geol., 5 Lasuen

[1]Collins, William Alexander : Chico, Bot., 30, Acacia
[2]Collis, William Edwin, Jr., Chester, N. J., Geol., 2, Encina
Combs, John Wesley : Palo Alto, Lat. gr., 515 Waverley P
A. B., Albion College, 1903.
Conrad, Warren Cross, Jr. : Los Angeles, Pre L., 85, 545 Bryant P
Conway, Daniel Francis, Emmetsburg, Ia., Law sp., 49, 178 Encina
Cook, Archibald B. : Santa Barbara, C. E., 64, 69 Encina
[1]Cook, Mills Peirce : San Francisco, Hist. 23, Phi Gamma Delta
Coolidge, Grace Burr : Palo Alto, Lat., 95, 660 Waverley P
[1]Coolidge, Karl Rafinesque : Palo Alto, Ent., 660 Waverley P
Coombe, Mary Edith : San Francisco, Hist., 30, K. Kappa Gamma
Coonan, Clarence : Eureka, Pre L., 103, Delta Upsilon
Coonradt, Arthur Chapin : Riverside, M. E., 113, 160 Encina
Cooper, Alton : Bellingham, Wash., Econ., 105, Sigma Chi
[1]Cooper, Jane Lawrence : Alameda, Germ. 12, K. Kappa Gamma
Cooper, Jay T. : Woodland, Pre L., 8, College Terrace
Cooperrider, Albert Owen : Palo Alto, Psych. gr., Manza. Hall P
A. B., University of Colorado, 1904.
Cooperrider, Lena Pearl : Palo Alto, Engl. gr., Manzan. Hall P
A. B., University of Colorado, 1904.
Corbet, Edward Burke : San Francisco, Geol., 9, S. Alpha Epsilon
Costar, Garrison : Chico, C. E., 81, 523 Cowper P
[2]Couch, Mary Juanita : Vacaville, Bot., 73, 455 Homer P
[2]Cox, Albert Brooks : Joplin, Mo., E. E., 102, 136 Encina
[2]Cox, Anna Shipley : San Jose, Lat.,103, 855 ChapmanSJ,SJ
Cox, Catharine Morris : San Jose, Germ., 37, 855 Chap., S J, S
Cox, Katherine : Santa Clara, Hist. gr., Manzanita Hall
A. B., Stanford, 1907.
[1]Cox, Lester Everett : Portland, Me., Bot. gr., 847 Bryant P
A. B., Stanford, 1909.
Cox, Mabel Lucille : San Bernardino, Hist. 101, 617 High P
Coy, Owen Cochran : San Jose, Hist. gr., 441 Emerson P
Ph. B., University of Pacific, 1907.
Cozzens, Edwin : San Jose, E.E., 14, 10 Broadway,S J,S
Craig, John J. : Los Angeles, Geol., 13, Salvatierra
Cramer, Harry Putnam : Portland, Ore., E. E., 68, 128 Encina
Cramer, Thomas Meredith : Palo Alto, Chem.,54, Channing Lane P
[2]Crandall, Archie Cole, Palo Alto, M. E. 18, 727 Waverley P
[1]Crandall, Carl C. : Los Angeles, C. E., 8, Kappa Sigma
Crary, Allan Hodgdon : Los Angeles, Econ., 18, Kappa Sigma
Craven, Leslie : Bellingham, Wash., Pre L., 104, 7 Encina

Crawford, David Paul : Cupertino, C. E., 67, 71 Encina
Crawford, Fred William : San Jose, Pre L.,114, Curtner av,S J,S
Crawford, James Porter : San Jose, Phyl., 25, 80 E.St.John,S J,S
Crellin, Earle Adair : Pleasanton, E. E., 47, Zeta Psi
Crippen, Ruth Melissa : San Diego, Phyl., 14, Walden
Croghan, Margaret Anna : Eureka, Lat. 86, 704 Bryant P
[1]Crook, Arta B. : Glenwood Springs, Colo., Lat., 21, 22 Lasuen
Crook, Welton Joseph : Melbourne, Aus., Geol., 38, 37 Salvatierra
[1]Croop, Arthur M. : San Jose, Educ., 115, San Jose, S J
Crosby, Clara : Los Gatos, Hist., 6, 51 Roble
Cross, Donella Mary : Mayfield, Lat., 77, Evergreen Park M
[1]Cross, Robert John : Mayfield, Chem., 56, Everg'n Park M
Crowder, Clifford Lee : Chico, Law gr., 523 Cowper P.
B. L., University of California, 1905.

Cullen, Edward James : Gilroy, C. E., 37, 103 Encina
[2]Cummings, Ernest John : Carpinteria, Grk., †28, 107 Encina
A. B., Occidental College, 1906.

[1]Curran, Luella : Pasadena, Frn., 6, 22 Lasuen
Curry, Bessie Alberta : San Jose, Phyl., 74, 91 S.Whit.,S J, S
Curry, William Graham : Palo Alto, Hist., 15, Kappa Alpha
[1]Cushing, John Eldridge : San Rafael, Hist. gr., Chi Psi
A. B., Stanford, 1909.

Cuthbertson, Alexander M. : Manchester, Chem., 101, 638 Channing P
Cuthbertson, Alice Bertha : Manchester, Germ., 107, 638 Channing P
Darby, Marian Maud : San Jose, Frn., 2, Gamma Phi Beta
[2]Darrow, Leon Elbert : Los Angeles, Frn., 635 Bryant
Das, Khagendra C. : Dacca, Bengal, India, Chem., 111, Cosm'poli'n Cl'b
Daugherty, Robert Long : Redondo, M. E., 125, 235 Emerson P
[1]Dauser, Sue Sophia : Fullerton, Hist., 28, 1129 Emerson P
[2]Davidson, Olive Marion : Colma, Hist., Colma, C
Davidson, William Mark : Porterville, Ent., 80, 704 Bryant P
[1]Davis, Dwight Moody : Kansas City, Mo., Hist. gr., Phi Kappa Psi
A. B., Stanford 1909.

Davis, Edna Grayce : Palo Alto, Engl., 96, 333 Waverly P
Davis, Edna May : Crockett, Frn. gr., 24 Roble
A. B., Stanford, 1908.

[2]Davis, George William : Willits, C. E., 33, 161 Encina
Davis, Grace Maple : Redwood City, Hist., 71, Redwood City R
Davis, Ida Ellen : Santa Maria, Germ., 81, 14 Salvatierra
Davis, John Allen : Los Angeles, Pre L., 12, D.Kappa Epsilon
Day, Norman Mayfield : San Francisco, E. E., 47., 148 Encina

Dean, Eleanor K. Eness : Pasadena, Engl., 11, Gamma Phi Beta
[1]Dean, Howard Roscoe : Shelton, Nebr., M. E., 318 Lytton P
Dean, John Ford : Shelton, Nebr., E. E., 318 Lytton P
DeBolt, Thurman Alden : Los Angeles, Pre L., 77, Kappa Alpha
Delano, Preston Brady : Palo Alto, Pre L., 110, 122 Encina
Dennis, Dede Irma : San Jose, Econ., 14, La Camaraderie
Dennis, Herbert Ernest : Loveland, Colo., Phil., 47, 411 Kipling
[1]Dennis, Horton T. : Tacoma, Wash., Geol. 50, Phi Delta Theta
Dernham, Sadie : San Francisco, Frn., 61, 1 Alvarado
Dickinson, Helen : Pasadena, Engl., 14, Walden
Dickinson, Perry Yaple : Stockton, C. E., 12, Encina
[2]Dickover, Erle Roy : Santa Barbara, Econ., 22, Encina
Dickson, Philip West : Los Angeles, Econ., 38, Sigma Nu
Dietterle, Howard Lee : San Francisco, Pre L., 11, 318 Emerson P
Dingle, Charles Oscar : Woodland, C. E., 11, College Terrace
Ditz, George Armand : Stockton, Pre L., 44, 156 Encina
Dixon, Joseph Scattergood : Escondido, Zool. sp., 44, 235 Emerson P
Dixon, Stanley K. : Los Angeles, Econ. sp., 10, D. Tau Delta
Dixon, Vera : San Jose, Engl., 46, 545 S. 9th, S J, S
Doak, Claude Kimball : San Diego, Pre L., 347 Alma P
[1]Doan, Norman Eugene : Sacramento, Pre L. 48, Sig. Alpha Epsilon
Dole, Kenneth Llewellyn : Riverside, Bot., 44, Beta Theta Pi
Dole, Sanford Ballard : Riverside, E. E., 99, Beta Theta Pi
Domaschenz, Walter Richard : Colton, Phyl., 13, 21 Lasuen
Donnelly, Jennie Lindsay : Truckee, Grk., 40, 704 Bryant P
[1]Donovan, Augustin Michael : San Jose, Pre L., 4, Col. Park, S J, S
[1]Donovan, Lawrence Perry : Visalia, Pre L., 3, Phi Kappa Psi
Dooner, Clara : Los Angeles, Draw. gr., Delta Delta Delta
A. B., Stanford, 1908.
Doron, Joshua Webber : Corona, Chem., 12, 199 Encina
Dorr, Harvey Emmonds : San Jose, Hist. gr., Ramona&Homer
A. B., Stanford, 1906.
Doxsee, Anna Margaret : Redwood City, Lat., 14, Redwood City R
Doxsee, Wilbur Harvey : Redwood City, C. E., 4, Redwood City R
Doyle, Harry Edward : Ellenville, N. Y., C. E.,†9, Goodell Club
Drew, Arthur Homer : Fresno, Pre L., 56, Sigma Chi
DuBois, Luther Edwin : Carthage, Ind., Pre L., 13, 9a Salvatierra
[1]Duernberger, George William : Palo Alto, E. E. sp., 518 Byron P
Duff, Emerson L. : South Pasadena, Econ., 40, Kappa Alpha
Duff, Isabel Mary : Menlo Park, Lat., 89, Menlo Park M
Duff, Marcella Carmelita : Menlo Park, Lat., 42, Menlo Park M

Duffin, Charles Greenlaw : Camas, Wash., E. E., 32, 235 Emerson P
Duffus, Robert Luther : Waterbury, Vt., Hist., 69, 751 Channing
Duffus, William McG. : Waterbury, Vt., Econ., 74, 21 Alvarado
[2]Dunipace, Gertrude Hilda : Morgan Hill, Germ., 36 Roble
Dunlap, Carol : Hanford, Lat., 45, 38 Roble
Dunlap, Lillian Susan : Whittier, Engl., 53, Pi Beta Phi
Dunn, May Alice : Monrovia, Hist. gr., Madrono
A. B., Stanford, 1908.

Duren, Frances Mae : Bakersfield, Hist., 31, 325 Alma P
Duren, Nellie Isabel : Bakersfield, Germ., 42, 325 Alma P
Dwyre, Harry Golding : Ft. Collins, Colo., M. E., 13, Sigma Nu
Dye, Theodore Cole : Dayton, Ohio, Econ., 32, Delta Tau Delta
Eames, Alfred Warner : Honolulu, H. I., Pre L., 41, Chi Psi
Earle, Edna : Los Angeles, Hist., 106, Gamma Phi Beta
Easler, James Marcellus T. : Los Angeles, M. E., 43, 533 Ramona P
[1]Eaton, Louis Reginald : San Francisco, Pre L., 58, Phi Gamma Delta
Eddy, Beatrice E. : Minneapolis, Minn., Econ., 70, Alpha Phi
Eddy, Helen Frances : Minneapolis, Minn., Frn., 77, Alpha Phi
Edminson, Edith Isabel : Pasadena, Germ., 9, K. Kappa Gamma
Edmonston, Arthur Donald : Palo Alto, C. E., 71, 727 Addison P
Edwards, Mary Constance : San Jose, Hist., 82, 654 S. 8th, S J,S
Edwards, Leslie Marion : Palo Alto, E. E., 87, 627 Homer P
Ehrenberg, Adele : Alameda, Engl., 41, Walden
Ehrhorn, Adolph Edward : San Francisco, E. E., 37., Delta Tau Delta
[1]Ehrnbeck, Anna Julia : Los Angeles, Germ. gr., 841 Bryant P
A. B., Stanford, 1908.

Ellerbeck, Aurania : Salt Lake City, Utah, Engl., 93, 1 Alvarado
Elliot, Walter, Jr. : Santa Maria, C. E., 56, Delta Tau Delta
Elliott, John Elbert : Pacific Grove, Geol., 32, 185 Encina
Elliott, Louis Dunshee : Stanford Univ., Chem., 43, 6 Aibonito ave
Ellsaesser, Fred : Braymer, Mo., Chem., 33, 405 Emerson P
Ely, Helen Elizabeth : Phoenix, Ariz., Engl., 45, Delta Gamma
Emerson, Ralph Hettrick : Denver, Colo., M. E., 13, Sigma Nu
Enderle, Maurice Frank : Santa Ana, Pre L., 7, Welakahao
Endres, Anthony : Los Angeles, E. E., 78, 144 Encina
Endres, Herman : Los Angeles, M. E., 17, 144 Encina
Engelhard, Edith Goebel : Los Angeles, Germ., 12, Gamma Phi Beta
[1]Erb, Benjamin Edward : Chemainus, B. C., Geol., 5, 359 Emerson
[2]Eto, Yozo : Shizuoka, Japan, Econ. sp., 8, Japanese Club
Evans, Kenneth L. : Stanford University, Germ., 61, Phi Kappa Psi
[1]Evans, Charles Bordoe : Palo Alto, C. E., 33, Sigma Nu

Evenden, Edward Sam'l: McMinnv'le, Or., Educ., 68, 92 Encina
Everett, Edward, Jr. : San Francisco, Pre L., Phi Gamma Delta
Eyer, Marguerite Knowlton : Beaumont, Engl., 10, Alpha Phi
Faber, Marion : Peoria, Ill., Lat., 76, 47 Roble
[1]Fablinger, Vera Brown : Campbell, Germ., 41, Campbell C
Fairclough, Katrine R. : Stanford Univ., Lat., 9, 6 Alvarado
Faltings, Volkert Fred'k : Petaluma, Chem., 15, 5 Lasuen
Farnsworth, Earle F. : Salt Lake City, U., Econ., 34, Sigma Chi
Farnsworth, Lillian McLaine : Visalia, Hist., 73, K. Kappa Gamma
Fassett, Weston Willard : Stockton, E.E., 14, 528 Stock't av SJ,S
Faubel, Grace : San Francisco, Hist., 11, 2 Salvatierra
Faulkner, George C. : San Luis Obispo, Pre L.,45, Phi Gamma Delta
Fawcett, Percy Douglas : Tacoma, Wash., Pre L., 12, Theta Delta Chi
Fellows, Florence May : Los Angeles, Hist., 7, 65 Roble
Feraud, Natalie Bourgeois : Redlands, Engl., 45, Walden
Ferguson, Harold Gale : Hollywood, Pre L.,44, D.Kappa Epsilon
Ferguson, Warren Essen : Hollywood, Pre L., 9, D. Kappa Epsilon
Ferry, Douglass Hewitt : San Diego, C. E., 116, 76 Encina
[1]Fetzer, Frank Lockhart : Denver, Colo., Pre L., 63, Kappa Sigma
Field, Alan Daniels : Alameda, Econ. sp., 7, Zeta Psi
Field, Andrew James : San Francisco, C. E., 16, 16 Salvatierra
Field, A. Ruth : Los Angeles, Hist., 10, 14 Salvatierra
Field, Bernice : San Jose, Germ.,106, 167 S.Priest,SJ,S
Figg-Hoblyn, Thomas Richard W. F. :
Santa Barbara, Phyl., 107, 53 Encina
[1]Finnie, Robert Johnston : Sacramento, Pre L, S. Alpha Epsilon
Fisher, George J. : Coyote, C. E., 74, 95 Encina
A. B., Santa Clara College, 1907.
Fisher, Marshall Weston : Mayfield, Educ., 51, Mayfield M
Fisk, Hiram Cornell : Green Bay, Wis., Engl., 98, 20 Lasuen
Fitting, Harold Hansen : San Bernardino, C. E., 100, 18 Encina
Fitting, John Waldemar : San Bernardino, C. E. 35, 18 Encina
[2]Fitzgerald, Fred Finley: Palo Alto, Chem. gr., 1140 Bryant, P
A. B., Stanford, 1905, A. M., 1906.
Fitzgerald, Robert Emmet : Georgetown, Pre L.,† 9, Santa Clara S
A. B., Santa Clara College, 1906, A. M., 1907.
Flagg, Lenora Enid : San Jose, Engl., 71, K. Kappa Gamma
Flaus, Italia Evans : Palo Alto, Engl., 108, 911 Scott P
Fleming, Grace Elinor : San Jose, Engl., 108, 5 Roble
Fleming, Robert Charles : San Jose, Pre L., 47, 20 Lasuen
Flentjen, Auguste C. : Los Angeles, Germ., 83, 564 University P

[1]Fletcher, Alfred : Burlingame, Pre L., Burlingame B
Fletcher, John Madison : Mountain View, Phil. gr., Mt. View M
A. B., Vanderbilt Univ., 1901; A. M., Univ. of Colorado, 1904.
Fletcher, William Daly : Palo Alto, Engl., 18, 55 Encina
Flickinger, Helen : Council Bluffs, Iowa, Zool., 80, 39 Roble
Flickinger, Margaret : Council Bluffs, Ia., Germ., 76, 16 Roble
Flinn, Harry : San Francisco, C. E., Encina
Flood, Hazel Dolores : Palo Alto, Hist., 93, 521 Everett P
[1]Fobes, Katharine F. : Loomis, Engl. 70, 529 Hamilton P
Foote, Robert Parke : Evanston, Wyo., E. E., 62, 140 Encina
Foote, Victor Mosely : Modesto, Pre L., 32, 327 Emerson P
Forbes, Florence Hazel : Palo Alto, Engl., 107, Gamma Phi Beta
Ford, Edsall Post : Portland, Ore., Math., 707 Bryant, P
Ford, Ernest Leland : Redlands, M. E., 46, 39 Encina
Ford, Nellie Elizabeth : Los Gatos, Phyl., 77, 56 Roble
Ford, Robert McFarlin : Los Gatos, Pre L., 104, 21 Encina
Forsyth, Ralph Kendall : Ninevah, Ind., Econ. gr., 533 Lytton av, P
A. B., Indiana University, 1908.
Foshay, Eleanor Anna : Los Angeles, Zool., 107, Delta Delta Delta
Foss, Marion Henry : Waterville, N. Y., Geol., 21, Delta Upsilon
Fowle, Helen Van de Water : Denver, Col. Engl., 43, K.Kappa Gamma
Fowler, Alice Belle : Paso Robles, Engl., 82, 9 Roble
Fox, Philip Benton : Redwood City, Geol., 9, Redwood City R
Frank, Lester Lettwich : San Francisco, Econ., 73, 171 Encina
[2]Franklin, Elinor Lewis : Lodi, Engl., 1 Alvarado
Frary, Ruth Thayer : San Diego, Engl., 77, 29 Roble
Fraser, James Herbert : San Jose, Chem., 38, 58 Willow, S J,S
Freeman, John Charles : Santa Barbara, C. E., 6, 132 Encina
French, Norman Du Gard : Thomson, Ill., Econ., 10., Sigma Chi
Friedrick, Pauline : San Diego, Draw., 14, Delta Gamma
Frolli, Albert William : Salinas, Geol., 99, Encina
Frost, Albert A. : San Diego, Econ., 14, 21 Encina
[1]Fuller, Justin Keyser : San Francisco, Phyl., 15, Encina
Fuller, William P., Jr. : San Francisco, Pre L., 71, S. Alpha Epsilon
Fuqua, Herbert Earnest : Terre Haute, Ind., M. E., 112, 129 Encina
Gale, Helen Avery : Palo Alto, Hist., 106, 940 Waverley P
Galvin, Reba Robins : Oakland, Engl., 87, Delta Gamma
Gammon, Dell Duane : Lodi, C. E., 71, Theta Delta Chi
Gandolfo, Florence Catherine : Ventura, Germ., 72, 62 Roble
Ganong, Carl F. : Oregon City, Ore., C. E., 65, Theta Delta Chi
[2]Garat, Louis Peter : San Francisco, C. E., 20, Delta Tau Delta

Gardner, Walter Hervey : Oroville, Chem., 111, 34 Encina
[2]Garfias, Valentine R. : Mex. City, Mex., Geol. gr., 60 Encina
A. B., Stanford, 1907.
Garland, Grover Thomas : Los Angeles, Econ., 12, Sigma Nu
[2]Garner, Aubrey Hamilton : Astoria, Ore., Geol., 19, College Terrace
Garnett, Benjamin Jay : Spokane, Wn., C. E., 65, Stanford Inn
Garst, Delta Avis : Riverside, Hist., 10, 67 Roble
Gassaway, Gordon : Los Angeles, Pre L., 13, Kappa Alpha
[1]Gay, Leslie Rowell : Redlands, Geol. gr., Beta Theta Pi
A. B., Stanford, 1909.
Geary, William Finlaw : Santa Rosa, Pre L., 7, Kappa Alpha
Geohegan, Helen : Pasadena, Engl., 38, 26 Roble
George, Florence Ethel : San Diego, Engl., 104, 18 Roble
George, Harrison Paul : San Diego, C. E., 31, Encina
[2]George, Leslie Nash : Waukegan, Ill., Econ., 26, Phi Kappa Psi
George, Melvin Frederick : Los Angeles, Econ., 82, 23 Encina
Gerard, Ruth : Long Beach, Engl., 67, 16 Alvarado
[2]Gertridge, Carl Henry : Los Gatos, Econ., Los Gatos, L
Gibbons, Edward Russell : Los Angeles, Econ., 9, Delta Tau Delta
Gibson, Edward Gilbert : Indianapolis,Ind., C. E., 104, 433 Melville P
Gilbert, Florence : San Bernardino, Engl., 71, 6 Roble
Gilbert, Hazel Jeannette : Pasadena, Germ.,† 8, Gamma Phi Beta
Giesy, Paul Church : Portland, Ore., Econ.,45, Sig. Alpha Epsilon
[1]Gilfillan, Sermet William : Los Angeles, Econ., 5, Delta Tau Delta
Gill, Emma Gladys : Palo Alto, Zool., 13, 200 Kingsley P
Gillett, Effie May : Sacramento, Engl., 106, Delta Delta Delta
Gillett, Ethel Gertrude : Sacramento, Zool., 29, Delta Delta Delta
Gillmore, Elizabeth May : Santa Barbara, Hist, 110, 14 Salvatierra
[1]Gilman, Harold Arthur : Redlands, Pre L. gr., 100 Encina
A. B., Stanford, 1909.
Gilmore, Ralph Rensselaer : Nicolaus, E. E., 14, College Terrace
Gleason, Daisy Marion : Los Angeles, Pre L., 47, Delta Delta Delta
[1]Gleason, Nellie Antoinette : Los Angeles, Engl., 44, Delta Delta Delta
Glendenning, Roy James : Santa Clara, Pre L., 83, 449 Ramona P
Goode, Stanley Edward : Chino, Pre L., 18, 119 Encina
[1]Goodell, James McLain : Mayfield, M. E. sp., 147, Col. Terrace
Goodhue, Carrie Amanda : Oakland, Germ.sp.,119, 1103 R'mona P
Goodwin, Clarence Bernard : Sunnyvale, C. E., 11, Sunnyvale S
Goold, Herbert S. : San Francisco, Pre L., 96, 152 Encina
Gordon, Claribell : Los Angeles, Engl., 77, 22 Lasuen
Gossett, Joseph Orland : Palo Alto, Educ., 96, 657 Channing P

Gott, Raymond Arthur : Alameda, Pre L., 103, Kappa Sigma
Gowan, Arthur Jewell : Los Angeles, E. E., 106, Delta Tau Delta
Gragg, Alden Orville : San Luis Obispo, Econ., 3, Theta Delta Chi
Graham, Marguerite : Redlands, Zool., 14, Delta Gamma
Graves, La Vergne Gardner : Los Gatos, E. E., 41, 8 Alvarado
[1]Graves, Norine Maureen : Whittier, Grk. 57, Gamma Phi Beta
Gray, Mabel Sabrina : Albany, N. Y., Germ.,101, Gamma Phi Beta
[1]Green, Harry Carlton : Wheatland, Ind., Econ. gr., 102 Encina
A. B., Stanford, 1909.

Green, Helen : Stanford Univ., Hist., 75, 13Salvatierra
Green, Warren Preston : Preston, E. E., 47, 5 Lasuen
[1]Greenberg, Harriet Dorothea : San Jose, Engl., 437 N 4th, S J, S
Greenfield, Lieurena Cole : St. Helena, Engl., 14, La Camaraderie
Greenwood, Harlow Verne : Vallejo, Educ. gr., Acacia
A. B., Stanford, 1908.

Gregg, Beryl LaGrande : Woodland, Pre L., 105, College Terrace
Griffin, George W. : Santa Cruz, C. E., 17, 841 Bryant P
Griffin, Marguerite Newbury : Los Angeles, Hist., 7, 65 Roble
Griffin, Roscoe Wadsworth : Vallejo, Pre L., 11, 181 Forest P
[1]Griffith, Thomas B. : Wichita, Kan., Econ. gr., Delta Tau Delta
A. B., Stanford, 1909.

Grimes, Mark Eldon : San Jose, Pre L., 6, 147 Encina
[1]Grove, Albertina Harriet : Palo Alto, Draw. 57, 363 Melville P
Gruwell, Lewis Earl : Lakeport, Pre L., 40, 181 Encina
Guerard, Wilhelmina M. : Stanford Univ., Hist. gr., 37 Salvatierra
B. L., University of Denver, 1908.

Guerena, Francis Louis : Sonora, Pre L., 44, 78 Encina
Gundlach, Kent Bernard : Spokane, Wash., E. E., 36, 20 Encina
Gunnell, Mary E. : Salt Lake City, U., Hist., 27, 47 Roble
Gunthorp, Horace : Palo Alto, Zool. gr., 467 Everett P
Ph. B., Hamline University, 1905.

Hadden, Georgina Evelyn : Palo Alto, Ent., 79, 1157 Ramona P
Hadley, Howard Irving : Santa Barbara, Pre L., 65, 20 Lasuen
[1]Hadley, Mildred Monroe : Whittier, Germ., 103, Pi Beta Phi
Hagan, Hugh Lawrence : Berkeley, Law gr., Palo Alto
B. L., University of California, 1906.

Haig, Florence Bertha : San Gabriel, Germ., 37, 30 Roble
Hails, Charles Hamilton : Santa Barbara, Pre L., 59, Phi Delta Theta
Hails, Raymond Richard : Santa Barbara, M. E., 13, 110 Encina
Haley Percis Coons : Palo Alto, Draw. sp., 61, 768 Bryant P
Hall, Katharine M. H. : San Jose, Educ., 105, 189 S. 11th, SJ,S

Hall, Mortimer Louis : Pasadena, Chem., 48, 183 Encina
Halliday, Thomas W. : Spokane, Wash., Geol., 57, Phi Delta Theta
Halsey, Stella Duffield : Honolulu, H. I., Bot., 106, 53 Roble
Hamilton, Archibald McD. : Palo Alto, Pre L., 113, 116 Encina
Hamilton, Arthur Elton : Pasadena, Pre L., 46, 168 Encina
Hamilton, Robert Cecil : Pasadena, Econ., 13, 168 Encina
Hanawalt, William Cyrus : Lordsburg, Educ.,† 10, College Terrace
Handel, Louis Walter : Buffalo, N. Y., Pre L.,† 11, 21 Lasuen
Hanley, Katharine Gertrude : Los Angeles, Hist., 42, Madrono
Hanna, Jessie Ray : Los Angeles, Hist., 11, K. Alpha Theta
Hannibal, Harold Briggs · San Jose, Geol., 12, College Terrace
Hansen, Edna Marie : San Mateo, Lat. gr., 402 Tilton, S M, S
A. B., Stanford, 1908.

Happy, Cyrus Prickett : Spokane, Wash., Pre L., 63, Phi Delta Theta
Harbaugh, Ross Wallace : Palo Alto, Chem., 105, Delta Tau Delta
Hardeman, Annie Louise : Palo Alto, Hist., 8, 455 Forest P
Hardison, Hope : Santa Paula, Zool., 41, 13 Madrono
Hardy, Georgie Saunders : San Diego, Draw., 59, 5 Roble
[2]Harle, Hugh Coffin : New York, N. Y., Educ.,25 Sig. Alpha Epsilon
Harley, Jacob Stover : Lordsburg, Engl., 74, College Terrace
Harris, Miriam Alice : San Jose, Hist., 82, K. K. Gamma
Harris, Myrtle Ethelia : Escondido, Engl. gr., Roble
A. B., Healdsburg College, 1897, A. M., 1901.

Harris, Walter J. : Pasadena, C. E., 81, 305 Alma P
Hart, Lowell Jay : Palo Alto, Econ., 64, 115 Alma P
[1]Harvey, Thurlow Weed : Whittier, C. E.,† 4, Welakahao Club
Haskett, Don Stanley : Pasadena, Econ., 105, 171 Encina
Haskett, Mack Howard : Willits, C. E., 10, 1a Alvarado
[2]Haslett, Roberta . Alameda, Fr.,† Kappa Kappa Gamma
Haslett, Samuel M., Jr. : Alameda, Econ., 13, Beta Theta Pi
Hastings, Russell Platt : Soney, B. I., C. E., 124, Chi Psi
[1]Hatch, Geraldine Viola : San Jose, Engl., Alpha Phi
Hatch, Harry Leslie : Paso Robles, Geol., 12, Coyote Club
Hatfield, George Juan : San Francisco, Pre L., 48, 120 Encina
Hauswirth, Frieda M. : Bern, Switzerland, Engl., 54, 455 University P
Haver, Harold McCuller : Redlands, E. E., 107, D. Kappa Epsilon
Hawes, Ben Merrill : Santa Cruz, Geol., 18, 118 Encina
Haworth, Forrest Leland : Palo Alto, Law, 32, 94 Encina
Haxo, Henry : San Francisco, Frn., 54, 515 Waverley P
Hayden, Mary Calvert : Phoenix, Ariz., Engl., 104, Delta Delta Delta
Hayes, Anson Clinton : Edenvale, Econ., 19, Delta Tau Delta

Hayes, Mildred Mary : Edenvale, Engl., 36, Gamma Phi Beta
[1]Hayes, Pauline Elizabeth : San Francisco, Frn. 61, 22 Lasuen
Hayes, Samuel John, Jr. : Redlands, Econ.,† 5, 100 Encina
Hayward, Edna : San Carlos, Germ., 78, Madrono
Hazeltine, Katherine Sherman : San Jose, Engl. gr., 596 S. 10th, S J, S
A. B., Stanford, 1909.
Hazen, Coralyn : Modesto, Engl. gr., Madrono
A. B., Stanford, 1908.
[2]Heald, Elmer Wilson : Palo Alto, Pre L, 22, 588 Hawth. av, P
Heald, Oscar Leslie : Palo Alto, M. E.,40, 1327 Byron P
Heartt, Jennie Alice : Los Angeles, Engl., 37, Gamma Phi Beta
[2]Hebert, Joseph Walter : San Jose, Econ., 338 N.2d,S J, S
Heche, Arthur : Pomona, Educ., 72, 430 Kipling P
[1]Hedemann, Edmund : Woodland, M. E., 3, Phi Gamma Delta
Heflinger, Grace Katherine : Pasadena, Math., 40, 22 Lasuen
[1]Heinly, Donald George : Los Angeles, Pre L., 83, Sigma Nu
[1]Hellman, Joseph Anthony H. . Redwood, Pre L., 60, Redwood R
Hellmann, Richard Hoge : Redwood, Pre L., 33, Redwood R
[1]Helsley, Edward Judson : Ceres, Pre L., 18, 193 Encina
[1]Helsley, Gordon Friedrich : Ceres, Phyl., 48, 193 Encina
Hemphill, John Parks : Calistoga, Econ., 102, 104 Encina
[2]Henderson, Harry Finley : Santa Ana, Hist.,103, 375 Kingsley av, P
Henderson, James William : Eureka, Econ., 13, S. A. Epsilon
[1]Henley, Victor H. : Mayfield, E. E., Evergreen Park
Henry, Thomas Cecil : Los Angeles, Econ., 50, D. Kappa Epsilon
Herbert, Elmer Harlan : Campbell, M. E., 127, Los Altos
[1]Herdman, Charles George : Palo Alto, C. E., 6, 1112 Ramona P
[2]Herdman, Mary Gertrude : Palo Alto, Span., 1112 Ramona st,P
[1]Herold, Stanley Carrollton : San Jose, Geol., 132, Acacia
[2]Herre, Albert Christian : Los Gatos, Bot. gr., Los Gatos L
A. B., Stanford, 1904, A. M., 1905.
Herron, Mary Louise : Palo Alto, Hist., 15, 105 Emerson P
[1]Hershiser, Beulah : Reno, Nev., Hist. gr., 16 Alvarado
A. B., University of Nevada, 1906.
Hertel, Elmer Louis : Pasadena, Hist., 30, Zeta Psi
Hess, Harry Lee : Baltimore, Md., M. E., 77, 160 Encina
Hess, John Strider : Stanford Univ., C. E., 103, 76 Encina
Hettman, Frederick Jacob : Rocklyn, Wn., E. E., 114, 131 Encina
Hettman, Walter Emil : Rocklyn, Wash., Pre L., 69, 131 Encina
Hickin, Vance : Rittman, Ohio, Chem., 97, 427 Webster P
Higgins, James Edwin, Jr. : Alameda, Econ., 33, Kappa Sigma

Higgins, Sidney Marshall : Los Angeles, Econ., 14, Beta Theta Pi
High, Helen Elisabeth : Pasadena, Physics, 40, 51 Roble
[1]Higley, Wynter Blain : Pasadena, Geol, gr.. 55 Encina
A. B., Stanford, 1909.

Hilby, Francis Bernard : Monterey, E. E., 48, 59 Encina
Hill, Frank Ernest : San Jose, Engl., 40, 9 Encina
Hill, Henrie Granville : San Jose, Pre L.,106, 715 WJulian,SJ,S
Hill, John James : Riverside, Pre L., 109, 68 Encina
Hill, Laurance Landreth : Los Angeles, Econ., 35, 56 Encina
[1]Hill, Mary Guyer : Hemet, Engl. 60, Delta Gamma
[2]Hill, Walter Hamilton : Hemet, Chem., 106, Delta Tau Delta
Hiller, Hazel Heloise : Palo Alto. Hist., 9, 419 Webster P
Hillyard, Sidney N. : Ilkley, England, Engl. sp., 14, 2 Encina
Hilton, Frank Howard : San Diego, Pre L., 36, 81 Encina
Hine, Thomas Buck : Eureka, Chem., 81, 130 Encina
Hiyama, Zenjiro : San Francisco, Germ., 14, 21 Aibonito av
[2]Hoag, Bessie Belle : Palo Alto, Lat. gr., 329 High St., P
A. B., Stanford, 1907.

Hoff, Eva : San Diego, Germ., 76, 54 Roble
Holcomb, Fred Leroy : Banning, Draw,. 105, 318 Emerson P
Holcomb, Grant : San Bernardino, Pre L., 44, 183 Encina
[2]Holcomb, Marjorie : Portland, Ore., Germ., Kappa Alpha Theta
[1]Holditch, George Edward : Orange, E. E., 8, College Terrace
Holeman, George S. : Riverside, Econ., 11, Welakahao
Hollensteiner, Arno G. : Missoula, Mont., Pre L., 39, 318 Emerson P
[2]Hollman, Emil Frederick : Pasadena, Educ., 40, 318 Lincoln St.
Holman, John Raymond : Portland, Ore., E. E., 89, Zeta Psi
Holmes, Alma : Los Angeles, Math., 11, 22 Lasuen
Holmes, Winn Earl : Wichita, Kan., Pre L., 68, Delta Tau Delta
Hook, Bertha Louise : San Bernardino, Germ., 14, Roble
Hook, Joseph Stanley : Perris, Geol., 67, 116 Encina
[1]Hoover, Bessie Belle : Palo Alto, Engl., 96, 321 Melville P
[1]Hopf, Karl Edward : San Mateo, Geol., 7, San Mateo S
Hopkins, Ernest Jerome : San Jose, Engl., 40, 9 Encina
[1]Hori, Ayao : Vallejo, E. E., 111, College Terrace
Horn, Pearl Myrtle : Oakland, Math. gr., Madrono
A. B., Stanford, 1908.

Horton, Harry Leonard : Ukiah, C. E. 85, 71 Encina
Horton, Marion Louise : Pasadena, Engl., 34, 25 Roble
Hosford, Ada : Menomonie, Wis., Lat. gr., 841 Bryant P
A. B., Stanford, 1907.

Hoskinson, Carl McKee : Sacramento, E. E. 104, 173 Encina
Hostettler, Burdette Lord : Erie, Pa., M. E. sp. 10, Acacia
Hough, Jesse W. : Claremont, Botany gr., College Terrace
B. S., Pomona College, 1908.
Houghland, Clair Wright : Rockport, Ind., Econ. 12, 251 Emerson P
Houghland, Janet Berry : Rockport, Ind., Hist. 113, Roble
[1]Houghland, John Mason, Rockport, Ind., Engl. † 6, 251 Emerson P
Houser, John David : Sacramento, Educ. 52, Encina
[2]Howell, Bertha Blanchard : Evanston, Ill., Engl.,† 628 Webster, P
Howell, John Wesley : Los Angeles, Pre L. 14, Beta Theta Pi
[1]Howell, Lucy Elizabeth : Los Angeles, Greek gr., Delta Gamma
A. B., Stanford, 1908.
Howell, Maude Teresa : Los Angeles, Hist. 73, Delta Gamma
Howland, Leon David : Worcester, N. Y., C. E. 68, College Terrace
Hubbard, Herbert Lincoln : Redlands, Econ. 10, 187 Encina
Hubbell, Harold Congdon : Ontario, Pre L. 8, 115 Encina
Huggins, Harold Clarkson : Portland, Ore., Econ. 63, 707 Bryant P
Hughes, Jennie Sherwood : Crockett, Draw. 77, 24 Roble
Hughes, Ralph Leon : Salinas, C. E. 75, 155 Encina
Hulburt, George Perry : Hollywood, E. E. 27, 515 Waverley P
Hulsman, Evelyn Clara : Susanville, Engl. 43, 611 Bryant P
Humphrey, Harry Frank : Santa Ana, Geol. 40, 118 Encina
Hunt, G. Walter : San Jose, C. E. sp. 8, 93 Encina
Hunt, Paul Switzer : Kansas City, Mo., C. E., 25, 318 Emerson
[1]Hunter, Hubert Samuel : Stanford Univ., Lat. 119, 43 Encina
Hunter, Mildred Lee : Los Angeles, Draw. 9, 33 Salvatierra
Hunter, Sue Marshall : Los Angeles, Hist. 48, 33 Salvatierra
Huntsberger, Adele Clare : Los Angeles, Hist. 50, Pi Beta Phi
Huntsberger, Maud Ethel : Los Angeles, Lat. gr., Delta Gamma
A. B., Stanford, 1908.
[1]Huntsberger, Ralph Francis : Los Angeles, Hist. gr., 66 Encina
A. B., Stanford, 1909.
Huston, Jay Calvin : Buffalo, N. Y., Hist. 42, 9a Salvatierra
Hutchins, Alice Agnes : Stanford Univ., Hist. gr., K. A. Theta
A. B., Stanford, 1908.
Hutchins, Mary Emeline : Stanford Univ., Hist. gr., Pine Cottage
A. B., Stanford, 1909.
[1]Hutchinson, Harry Turner : Huron, S. D., Pre L. gr., 77 Encina
A. B., Stanford, 1909.
Hutchinson, Ruth : Los Angeles, Hist. 14, Gamma Phi Beta

Hyatt, Marguerite : Sacramento, A. B., Stanford, 1908.	Zool. gr.,	45 Roble
Hyatt, Shirley : Sacramento, A. B., Stanford, 1906, A. M., 1908.	Phys. gr.,	67 Roble
[1]Hyde, Mary Elizabeth : Palo Alto, A. B., Stanford, 1901.	Hist. gr.,	334 Lincoln Av. P
Ichihashi, Yamato : Stanford Univ., A. B., Stanford, 1907, A. M., 1908.	Econ. gr.,	Japanese Club
Ichinose, Hajime : Nagano, Japan,	M. E. 13,	Japanese Club
[1]Ish, Max Ellis : Palo Alto,	C. E. 10,	160 Webster P
Jack, Norman Michel : Los Angeles,	Econ. 7,	Beta Theta Pi
Jackson, Frank Kennedy : Berkeley,	Econ. 91,	117 Encina
Jacobi, Aaron Leonard : San Francisco,	Pre L. 37,	14 Encina
[1]James, Joseph Pierson : Berkeley,	Chem. 30,	21 Salvatierra
James, Myrtle Hodge : Santa Monica,	Germ. 64,	44 Roble
Jameson, Eloise : Corona,	Chem. 82,	55 Roble
Jeffreys, Anna Ernestine : Princeton,	Phyl. 55,	39 Roble
Jenanyan, Samuel Stephen : Orosi,	Chem. 103,	37 Encina
Jenkins, Alice Mabel : Stanford Univ.,	Phyl. 82,	3 Lasuen
Jesson, Robert Harold : Ontario,	C. E. 43,	91 Encina
Jewett, Inez Darrell : Fresno,	Germ. 43,	Pi Beta Phi
Joachims, Arthur : Campbell,	C. E. 41,	Waverley St.
[2]Johnson, Alexander Parley : Los Angeles,	E. E.,	Zeta Psi
[2]Johnson, Carrie Jette : Pacific Grove,	Hist., 20,	57 Roble
Johnson, Emily B. : Los Angeles,	Hist. 71,	K. K. Gamma
Johnson, Frederick M. : San Francisco,	Econ. 12,	Beta Theta Pi
[2]Johnson, Glenn H. : Pasadena,	Econ., sp.,	Beta Theta Pi
Johnson, James Rowland : San Jose,	E. E. 66,	196 Encina
Johnson, Johanne Tollefine : San Jose,	Phyl. 104,	16 Alvarado
[1]Johnson, Philip Royal : Los Angeles,	Econ. 68,	Zeta Psi
Johnston, Angus, Jr. : Colton,	Econ. 63,	32 Encina
[1]Johnston, Carl Edward : Santa Cruz,	Econ. 20,	Kappa Alpha
Johnston, Hazel May : Santa Clara,	Hist. 57,	Alpha Phi
[1]Johnston, Walter Foster : Spokane, Wn.,	Pre L. 6,	415 Lytton P
Jollyman, Fanny : Cupertino,	Bot. 10,	531 Cowper P
[2]Jones, James Walter : La Porte,	Chem.,	718 Bryant, P
[1]Jones, Leona Lyle : Palo Alto,	Hist. 4,	605 Gilman P
Jones, Louis Hollister : Pasadena,	Bot. 38,	Phi Kappa Psi
Jordan, Edward : Brisbane, Aust., B. S., University of Sydney, 1901.	Educ. gr.,	101 Encina
Jordan, Guy Wilfred : Colton,	Chem. 15,	College Terrace

Jordan, Knight Starr : Stanford Univ.,	Geol. 67,	Xazmin House
Jorgensen, Henry Garfield : Los Gatos, A. B., Stanford, 1907.	Law. gr.,	723 Hamilton P
Junge, George Edward : Palo Alto,	Law † 33,	305 Melville P
Junge, Marie Elizabeth : Palo Alto,	Phyl. 11,	305 Melville P
[1]Katakura, Tojiro : Osaka, Japan,	Econ. sp. 90,	Japanese Club
Kauffman, Florence : Pomona, A. B., Stanford, 1909.	Engl. gr.,	2 Salvatierra
[1]Kawara, Masaki : San Francisco, A. B., Stanford, 1908, Engineer, 1909.	E. E. gr.,	Japanese Club
[2]Kay, David Nelson : Sacramento,	Geol., 57,	629 Emerson, P
Kay, Willard E., Jr. : Ogden, Utah,	Geol., 12,	12 Alvarado
Keatinge, Annie Harriet : Palo Alto,	Chem. 30,	111 Bryant P
Keech, Helen Jeannette : Santa Ana,	Bot. 105,	342 Homer P
[2]Keesling, Hector : San Jose,	E. E., 61,	Sigma Nu
Keller, Clefa Edna : Los Angeles,	Germ. 69,	1 Alvarado
[2]Keller, Norma Grace : Almira, Wn.,	Germ., 44,	Madrono
Kelley, Charlotte Jane : Redlands, A. B., Stanford, 1908.	Hist. gr.,	17 Madrono
[1]Kellogg, Rollo Morton : Fallbrook,	C. E. 31,	157 Encina
[1]Kelly, Daniel : Winamac, Ind.,	Geol. 3,	745 Cowper P
Kelly, Edith Louise : Oakland,	Germ. 47,	325 Alma P
Kelly, Laurence Corbett : Winnipeg, Man.,	Econ. 41,	Phi Kappa Psi
Kelly, Thomas Henry : Winnipeg, Man.,	Econ. 92,	Phi Kappa Psi
Kennard, Ada Marie : Redlands,	Draw. 40,	La Camaraderie
Kennedy, Louis Rex : Orange,	C. E. 12,	Kappa Alpha
Kennedy, Stanley C. : Honolulu, H. T.,	Hist. 9,	Phi Kappa Psi
Kennicott, Anna T. : Westcliffe, Colo.,	Chem. 112,	20 Roble
Kercheval, Howard G. : Sacramento,	Pre L. 6,	Sigma Nu
Keyston, Garton Donald : Los Gatos,	Engl. 4,	74 Encina
Killian, Joseph Adolf : Los Angeles,	C. E. sp. 52,	S. A. Epsilon
[2]Kilpatrick, Jennie Faye : Palo Alto,	Lat.,	445 Forest av., P
Kilpatrick, Rollo Raymond : Palo Alto,	Greek 65,	445 Forest P
King, Alfred Thomas : San Luis Obispo,	Draw. 13,	Phi Delta Theta
King, Dean : Kalispell, Mont.,	Geol. 73,	318 Emerson P
King, Harriet Shulze : Banning,	Phyl. 67,	55 Roble
Kirk, Mabel Louise : Los Angeles,	Draw. 70,	Roble
Kirkham, Francis W. : Provo, Utah, A. B., University of Michigan, 1906.	Econ. gr.,	358 Homer P
Kirkwood, Marion R. : Colorado Spgs., Col.,	Pre L. 102,	Delta Upsilon
Kistler, Jessie Rua : Covina,	Engl. 49,	521 Everett P

Kittredge, Ben Webster : Cincinnati, O., Law sp. 14, 8 Alvarado
[2]Knapp, Bertha Jane : Tehachapi, Germ., 84, Walden Club
Knapp, Myra E. : Bloomington, Wis., Hist. 15, Evergreen Park P
Knight, Harold Pratt : Pasadena, Chem. 40, Phi Gamma Delta
[2]Knollin, Ernesto Ray : Auburn, N. Y., Math., 13 Salvatierra
Knollin, Herbert Edward : Auburn, N. Y., Educ. 64, 5 Salvatierra
[1]Knowles, Paul Valerian : San Francisco, Lat. gr., 2873 Flsm, S F S
A. B., Stanford, 1909.

Knox, Marguerite Regina : Los Angeles, Frn. 45, Walden
[2]Kobbe, Eric : Pasadena, Math., 5, Beta Theta Pi
Kocher, Alfred Lawrence : San Jose, Hist. 100, 99 Morrison S J S
[1]Koebig, Kurt Julius : Los Angeles, Pre L. 3, Chi Psi
[1]Koerner, William : Oregon City, Ore., Geol. gr., Kappa Sigma
A. B., Stanford, 1909.

Kollman, Charles : Santa Cruz, Econ. 65, 232 Lytton P
Konno, Rokuro Goto : Palo Alto, Econ. 40, Japanese Club
Kramm, Hugo Edmund : Palo Alto, Geol. 109, 533 Ramona P
[1]Krause, Vernett Grover : Savanna, Ill., Bot. 902 Bryant P
Kuck, Bertha Matilda : Menlo Park, Educ. 15, Menlo Park M
[1]Kughen, Flora Elizabeth : Los Angeles, Hist. gr., 16 Alvarado
A. B., Stanford, 1909.

Kuhnert, Walter Andrew : San Francisco, Chem. 42, 535 Byron P
Lacey, Gladys Vivien : Salinas, Hist. 26, Roble
[1]Lacey, Rowland Sherman : San Diego, Hist. gr., 119 Encina
A. B., Stanford, 1908.

Lacey, William Noble : San Diego, Chem. 47, 70 Encina
Lada, Paul Frank H. : Golden, Colo., C. E. † 12, Welakahao Club
La Dow, Ruth : Fredonia, Kan., Germ. gr., Madrono
A. B., Randolph-Macon University, 1908.

[1]Laflin, Ben T. : Rock Island, Ill., Geol. †, 4, 707 Bryant P
La Grange, George Erwin : Redlands, Pre L. 44, 176 Bryant P
Lake, Harrison Morton : San Jose, Phyl. 13, 21 Lasuen
Lake, Jarrett Townsend : Redlands, E. E. 35, 5 Lasuen
Lakin, Egerton Drew : Palo Alto, Law gr., Acacia
A. B., Stanford, 1908.

Lambie, Ethel Louise : Great Falls, Mont., Lat. 105, Walden
[1]Landis, Earl Ellsworth : Colesburg, Ia., M. E. sp. 2, College Terrace
Landon, Maude Juanita : Los Gatos, Botany 78, 5 Alvarado
[1]Lane, Ilda : Los Angeles, Hist. 5, 11 Salvatierra
Lanktree, Elizabeth Frances : Alameda, Psych. 48, 14 Salvatierra
Lantz, Grover Berner : Colton, Geol. 11, 51 Encina

Large, John Henry : Owaneco, Ill., Pre L. 73, 229 S.Crit'n,SJS
Large, Shelby LaVerne : Owaneco, Ill., Pre L. 105, 567 Lincoln P
Larkin, Gail Carhart : Redlands, Pre L. 12, 197 Encina
[2]Lasky, Bernard Harold : San Francisco, Geol., 141 Encina
Lawson, Edith : Sacramento, Engl. 75, Delta Delta Delta
Leach, Charles Nelson : Stanford Univ., Chem. 100, 178 Encina
Leaf, Erle Mervin : San Jose, Pre L. 73, 7 Encina
Leaming, Lucy Emeline : Palo Alto, Math. 86, 321 Melville P
Le Count, Clarence Milton : Clark, S. D., E. E. 40, Welakahao Club
Lee, Bradner Wells, Jr. : Los Angeles, Pre L. 41, D. K. Epsilon
[1]Lee, Kenyon Farrar : Los Angeles, Pre L. 5, D. K. Epsilon
Leeds, Jacob Howard : San Diego, E. E. 43, Kappa Alpha
Legge, Frances Lynette : Pasadena, Engl. 50, K. Alpha Theta
Leib, Earl Warren Russell : San Jose. Geol. 30, Zeta Psi
Lenfest, Blossom Edith : Los Gatos, Hist. 69, 324 Emerson P
[2]Lengfeld, Louis : San Francisco, Econ., 16 Salvatierra
[1]Leonard, Florence A. : San Bernardino, Bot. 89, 7 Lasuen
[1]Lener, Kasper : San Jose, Chem. sp. 2, 520WSSal,SJ S
Lever, Marcia Brucker : Redlands, Engl. 71, 63 Roble
Levy, Joe Paul : Hueneme, Econ. 59, 151 Encina
[2]Levy, Paul Marle : San Francisco, Chem., 718 Bryant, P
[2]Lewis, Ervin Eugene : Brownville, N. Y., Educ.gr., 303E.S.Fer'do,SJ,S
A. B., Stanford, 1907.
Lewis, Howard Augustus : Los Angeles, Pre L. 10, Theta Delta Chi
Lewis, James Ogier : Pacific Grove, Geol. 79, 30 Encina
Lewis, Ruth Elizabeth : San Francisco, Greek 107, Pi Beta Phi
Libbin, Thomas J. : San Francisco, Econ. 103, College Terrace
[1]Lilienthal, Jesse W., Jr. : San Francisco, Hist. gr., 16 Salvatierra
A. B., Stanford, 1909.
Lilienthal, Philip N., Jr. : San Francisco, Hist. 44, 162 Encina
Lindauer, Samson A. : Deming, N. M., Pre L. 83, 81 Encina
[1]Little, John Elwin : Whittier, Geol. 31, Phi Kappa Psi
[1]Little, Robbins : Pasadena, Geol. 29, Beta Theta Pi
[1]Lockhart, Archie : Santa Rosa, E. E. 5, Welakahao Club
[1]Long, Albert Regan : Redwood, M. E. sp. 23, Redwood R
[2]Long, Burton Earle : Glendora, Chem., 100, Welakahao Club
[2]Looney, Susan M. : Palo Alto, Educ., 416 Webster, P
Louis, Gilbert Ernest : Riverside, Geol. 47, 64 Encina
Low, Isabel Tura : Green Mountain, Ia., Germ. 74, 445 Homer P
[2]Lowman, Sheda Amy : Los Angeles, Hist., 2 Salvatierra
Luchsinger, Albert George : San Francisco, Econ. 94, S. A. Epsilon

[1]Luhrs, Arthur Cleveland : Phoenix, Ariz., Geol. gr., 68 Encina
A. B., Stanford, 1909.
Luke, Amy Genevieve : Palo Alto, Engl. gr., 564 University P
A. B., Stanford, 1908.
[2]Lumsden, Treve Berlin : Los Angeles, C. E., Kappa Alpha
Lyne, Henry Stephens : Melbourne, Aust., Geol. 43, 37 Salvatierra
[1]Lynn, Charles Mathew : San Jose, C. E. 6, 87 N Priest, SJ, S
McAlister, James W., Jr. : Los Angeles, Econ. 37, 117 Encina
McAllister, Stella : Sacramento, Hist. 106, 67 Roble
McCann, Eugene Garrison : Los Angeles, E. E. 75, 44 Encina
McCann, Robert James : Pacific Grove, Geol. sp. 32, 520 Lytton P
McCarthy, Mary Louise : Honolulu, T. H., Engl. 10, 64 Roble
McClelland, Ruth Elizabeth : Sacramento, Hist. 102, Alpha Phi
McConnell, Walter Hurlbut : Los Angeles, Pre L. 32, Delta Upsilon
MacCormac, Josephine V. : San Francisco, Grk. 15, 481 Hamilton P
McCowen, Hale, Jr. : Ukiah, Pre L. 87, 847 Bryant P
[2]McCready, Harry L. : Cold Springs, Wyo., C. E. sp., 430 Homer P
[2]McCready, Ida : Tacoma, Wn., Fr., 11 Salvatierra
McCullough, A. Stafford : Clifton, Ohio, Chem. 40, 235 Emerson P
[1]McDaniel, Ernest Penn : Portland, Ore., E. E. sp. 6, 235 Emerson P
[1]McDaniels, George Nelson : Stanford U., Law, gr., 8 Alvarado
A. B., Harvard University, 1899, A. M., 1900.
McDonald, Clarence Chester, Woodland, Pre L. 9. Encina
McDonald, James Owen : Compton, E. E. 84, 166 Encina
McDougal, Latham Eastman : Belmont, C. E. 5, Belmont B
MacEwan, Malcolm Robt. : Portland, Ore., Econ. 10, Kappa Sigma
McEwen, George Francis : Palo Alto, Phys. gr., 640 Homer P
A. B., Stanford, 1908.
McFadden, Robert Clyde : Fullerton, E. E. 79, 64 Encina
McFarland, Allan Parker : Danville, Ill., Pre L. 99, Delta K. Epsilon
McFarland, Elizabeth Mace : Danville, Ill., Frn. gr., 10 Roble
Ph. B., University of Chicago, 1907.
[2]McGilvray, Walter Scott : Stanford Univ., Hist., 57, Escondita Cottage
McGregor, Ernest Alex. : Melden, Mass., Zool. gr., Schnell Club
A. B., Stanford, 1908.
McGregor, Gregor : Benicia, C. E. 79, 75 Encina
[1]McHenry, Lorin Hayes : Olympia, Wash., Chem. 7, 196 Encina
McKay, George : Ukiah, C. E. 14, Encina
McKee, Abigail Frances : San Jose, Lat. 75, 16 Alvarado
[1]McKee, Bessie Willoughby : Palo Alto, Germ. 89, 628 Waverley P
Mackenzie, Kenneth Stuart : Santa Rosa, Pre L. 61, 178 Encina
McKeown, Edward L. : San Martin, Pre L. 44, 37 Encina

Mackey, Lorrain Banks : Los Angeles,	Econ. 58,	Beta Theta Pi
McKinley, Sara Fay : Anaheim,	Germ. 103,	Delta D. Delta
McLachlan, Anita Jean : Pasadena,	Hist. 40,	K. Kappa Gamma
MacLachlan, Marion Allison : S. Barbara,	Hist. 10,	630 Lincoln P
[1]Macmillan, Alfred : Berkeley,	Pre L. 57,	140 Encina
McMillan, Cora Lilo : Browns Valley,	Educ. 73,	45 Roble
McMillan, W. Bruce : San Jose,	C. E. 50,	5 Lasuen
McMurphy, James I. W. : Porterville, A. B., Stanford, 1908.	Bot. gr.,	Schnell House
McNulty, Frederick William : Fortuna,	Pre L. 102,	Theta Delta Chi
Macomber, Frank J., Jr. : Los Angeles,	Pre L. 63,	Kappa Sigma
[1]Macomber, Lawrence Osgood : Pasadena,	Law 59,	Phi Delta Theta
McPheeters, George Carl H. : Palo Alto,	Phyl. 80,	836 Waverley P
Macpherson, Dorothea : Los Altos,	Engl. 104,	Alpha Phi
Macready, George Alex. : Los Angeles,	Geol. 80,	8 Encina
Macready, John Arthur : Los Angeles,	Econ. 8,	8 Encina
McWethy, Jesse Robert : Rialto,	C. E. 37,	169 Encina
McWethy, LeRoy : Rialto,	C. E. 99,	169 Encina
Maddox, Hazel Claire : Visalia,	Zool. 105,	K. K. Gamma
Maddox, Ruth Evalina : Visalia,	Germ. 67,	K. K. Gamma
Mahone, Francis D. : Honolulu, H. T.,	M. E. 62,	Kappa Sigma
[1]Maine, Beatrice M. : Riverside, A. B., Stanford, 1909.	Germ. gr.,	26 Roble
Malloy, Minnie F. : Walla Walla, Wash.,	Engl. 105,	16 Alvarado
[1]Malone, Maurice Young : Laton,	Pre L. 61,	166 Encina
Mann, Horace : San Carlos,	Geol. 61,	42 Encina
Mann, Leland S. : Arroyo Grande,	Pre L. 22,	38 Encina
Marceau, Daniel Victor : Lockeford, A. B., Stanford, 1909.	Law gr.,	121 Encina
Marchant, Clyde Coad : Tustin,	Chem. 59,	115 Encina
Marks, Louis : Los Gatos,	C. E. 16,	Los Gatos, L
Marr, Ernest : Saint Helena,	Law sp. 5,	235 Emerson P
[1]Marsh, Burnham Williams : Mill Valley,	Pre L. 3,	Phi Gamma Delta
Marshall, Hugh Gibson : Monrovia,	C. E. 113,	33 Encina
Marshall, James William : Los Angeles,	Econ. sp. 14,	Col. Terrace
Marshall, Margaret : Deputy, Ind.,	Psych. 98,	16 Alvarado
[1]Marshall, Ralph Kerr : Phoenix, Ariz.,	Pre L. 55,	54 Encina
Marshall, Verna Mae : Riverside,	Draw. 10,	P. Beta Phi
Martin, George Everett : Dixon,	C. E. 61,	28 Encina
Marx, Dorothy Grotecloss : Palo Alto,	Engl. 40,	357 Kingsley P
Marx, Roland Grotecloss : Palo Alto,	C. E. 47,	357 Kingsley P

[1]Mason, Charles William : San Francisco, Econ. 38, 139 Encina
Mason, Ruth : Mountain View, Bot. 8, Mountain View M
Masters, William Henry : Portland, Ore., Pre L. 105, 129 Encina
[1]Matchette, Paul Lenoir : West Berkeley, Phyl. 14, Delta Tau Delta
Mathiason, Gertrude Karen : Los Angeles, Engl. 104, 20 Roble
[1]Matsuda, Frank Moritaro : San Francisco, E. E. sp. 7, 427 Kingsley P
[2]Matsuoka, Shigezo : San Francisco, Math. sp., 13, 3 Alvarado
[2]Mattes, Lewis Yarde : Easton, Pa., C. E. sp., 47, Sigma Nu
Matteson, Alice Bell : Mountain View, Hist. 10, 69 Roble
Matthias, Edwin Clark : Spokane, Wash., Pre L. 46, Phi Kappa Psi
Matthiessen, Marcus Martin : Campbell, Law gr., Campbell C
A. B., Harvard University, 1905.

[2]Mattingly, Gladys Marie : San Francisco, Draw., 42, 1910 Green, S F
[2]Maundrell, Harold Hugh : San Francisco, Econ., Sigma Alpha Epsilon
[1]Mead, Jean Margaret : Los Angeles, Engl. 7, Kappa Alpha Theta
Mealey, William Perry : Compton, Pre L. 110, 166 Encina
[1]Meddick, Thomas Devereaux : Ovid, N.Y., E. E. 35, 178 Encina
Meeks, Elsie Blanch : Galveston, Ind., Lat. gr., 50 Roble
A. B., University of Indiana, 1908.

Melcon, Sisag Vahram : Kingsburg, E. E. 12, 405 Emerson P
Melcon, Zenope Parnak : Kingsburg, E. E. 7, 405 Emerson P
Melczer, Edward A. : Phoenix, Ariz., Geol. 66, 68 Encina
Menke, John Henry, Jr. : Salinas, Geol. 73, 45 Encina
Meredith, William John : Palo Alto, Educ. gr., Homerian Hall P
A. B., University of Washington, 1900.

Mereen, John Dunning : San Francisco, M. E. 63, Delta Upsilon
Merritt, Floyd C. : San Luis Obispo, Geol. 72, 177 Encina
Mersereau, Irene : Pasadena, Engl 45, 42 Roble
Messer, Robert Walcott : Rockland, Me., Germ. 46, 21 Lasuen
Meston, Archibald F. : Santa Barbara, M. E. 81, 132 Encina
Metzner, Florence Prior : San Francisco, Germ. 53, Pi Beta Phi
Miano, John Norton : San Jose, E. E. 115, 115WW'I'ms,SJS
Michod, Hazel Lorena : Los Angeles, Frn. 104, Delta Delta Delta
Miller, Alvera Elizabeth : Skyland, Engl. 109, 257 Byron St.
[2]Miller, Iva Myrtle : Santa Ana, Germ. gr., Madrona
A. B., Stanford, 1907.

Miller, James Irvin : Santa Cruz, Geol. 31, 177 Encina
Miller, John Martin : Reedley, Ent. gr., Marchmont Club
A. B., Stanford, 1908.

Miller, John Owen : San Francisco, C. E. 98, 9a Salvatierra
Miller, Maude Anita : Salt Lake City, U., Frn. 68, Delta Delta Delta

Miller, Minnie M. : Searchlight, Nev., Hist. 13, 8 Roble
Miller, R. Justin : Hanford, Pre L. 56, 108 Encina
Miller, Stella A. : Huntington Park, Engl. 71, La Camaraderie
[1]Miller, William Stanford : Palo Alto, C. E. 27, 630 Bryant P
[1]Milliken, Calla Rhetta : Colton, Engl. gr., 9 Roble
A. B., Stanford, 1908.
[1]Milliken, Ralph Le Roy : Sioux City, Ia., Hist. 113, Acacia
[1]Millis, William Lee : Napa, Geol. 38, 5 Lasuen
[2]Mills, Cecil Edgar : Camas, Wn., Pre L. 26, 235 Emerson, P
Mills, John Herman : Palo Alto, Phyl. 15, 530 Lytton P
Mills, Wallace C. : Janesville, Wis., M. E. 50, 445 Forest P
Millsap, Robert Elmer : Pasadena, C. E. 12, 147 Encina
[1]Mini, Theodore : Los Gatos, C. E. 10, 39 Encina
Minturn, LeRoy : San Francisco, E. E. 83, D. Kappa Epsilon
Mirrielees, Lucia B. : Big Timber, Mont., Engl. 101, Madrono
Mitamura, Matakichi : San Jose, Geol. sp. 11, Japanese Club
Mitchell, DeWitt Charles : San Diego, Pre L. 30, D. Kappa Epsilon
Mitchell, Marion Kate : San Diego, Hist. 28, Alpha Phi
Mitchell, Merle Ellsworth : Santa Rosa, Pre L. 43, Encina
Mitchell, Mowatt Merrill : Los Angeles, Econ. 68, Zeta Psi
Mochizuki, Kazumara : San Mateo, Econ. 36, Japanese Club
Mogeau, Marguerite B. : San Bernardino, Engl. 10, 22 Lasuen
Moise, Nina Ethel : San Francisco, Hist. 14, Madrono
[2]Monroe, Helen : Denver, Colo., Frn. 34, Kappa Alpha Theta
Monteath, James Shaw : Tonopah, Nev., Geol. 13, 475 Hamilton P
Montieth, Minerva: Paso Robles, Phys. gr., 11 Roble
A. B., Stanford, 1909.
Montgomery, Chester Arthur : Palo Alto, E. E. 107, 333 Kipling P
Montgomery, Orland F. : Tulare, Phyl. 76, Kappa Sigma
[2]Moore, Courtney L. : Monterey, Law, sp., Chi Psi
Moore, Elizabeth : Dunlap, Ia., Engl. gr., 6 Roble
Ph. B., Iowa College, 1898; Ph. M., Univ. of Chicago, 1908.
[1]Moore, Everett Lee : Menlo Park, C. E. sp. 4, Menlo Park M
Moore, Jennie Cloughly : San Diego, Germ. 97, 16 Alvarado
Moore, Julia Eugenia : Berkeley, Frn. 11, P. Beta Phi
Moore, Neil Preston : Palo Alto, M. E. 12, 564 Hamilton P
Moore, Virginia : Los Gatos, Hist. 14, Walden
Moorhead, James Barbour : Los Angeles, E. E. 98, 36 Encina
Morell, George Fowler : Palo Alto, Pre L. 80, 764 Channing
Morgan, Edith Theresa : Columbia, Engl. 40, 16 Alvarado
Morgan, Geoffrey Francis : Los Angeles, Engl. 73, 19 Alvarado

Morgan, Gladys Myfanwy : San Diego, Phyl. 28, Madrono
Morgan, Harold Sydney : San Diego, Phyl. 15, 194 Encina
[1]Morgan, Jeannette Catherine : San Diego, Germ. gr., 54 Roble
A. B., Stanford, 1909.
Morgan, Jessie Caroline : Los Angeles, Hist. 84, Delta Gamma
Morgan, Octavius Weller : Los Angeles, C. E., 76, Sigma Nu
Moroney, Carl Joseph : Pueblo, Colo., M. E. 73, 318 Emerson P
Morris, Charles Shoemaker : Pasadena, Bot. gr., 40 Encina
A. B., Stanford, 1908.
Morris, Robert Farley : San Francisco, C. E. 80, 318 Emerson P
Morris, Samuel Brooks : Pasadena, C. E. 46, 82 Encina
Morrison, Charlotte Watrous : Berkeley, Germ. 75, Walden
Morrison, George David : San Francisco, Econ. 54, Encina
Morrison, Wayland A. : Los Angeles, Phyl. 71, Delta Tau Delta
Mortensen, George Emil : San Lorenzo, Chem. 86, 405 Emerson P
Moss, Harold Rae : Palo Alto, Chem. 61, 127 Cowper P
Moss, Lora Belle : E. Claridon, O., Math. 108, 353 Lytton P
Motomura, Seizo : San Francisco, E. E. 113, Japanese Club
Mott, Albert Gifford : San Jose, E. E. gr., 53 Encina
A. B., Stanford, 1908.
[1]Mount, Edith Hazel : Eureka, Ent. 37, 43 Roble
Mues, Merle Brownie : Palo Alto, Germ. 88, 436 Tasso P
Munger, Arthur Lee, Jr. : Palo Alto, Chem. 89, 30 Encina
Murakami, Yoshi : Ehime, Japan, E. E. 34, 1 Aibonito Ave
[1]Murdoch, Effie Lisle : Salt Lake City, U., Lat. gr., 24 Roble
A. B., Stanford, 1908.
Murphey, Robert Bivins : Tucson, Ariz., Law gr., 90 Encina
A. B., Stanford, 1908.
Murray, Alfred Conklin : Woodland, Pre L. 13, College Terrace
Myer, Arthur Henry : San Francisco, Chem. 69, 96 Encina
Myers, Robert Folsom : Bakersfield, E. E. 84, 57 Encina
Nagel, Helen May : Davenport, Ia., Chem. 37, 1 Aibonito Ave
Naka, Kaizo : San Francisco, Econ. 22, Japanese Club
Nakamura, Masawo K. : San Francisco, M. E. sp. 25, Japanese Club
Nash, Beth Hazel : Los Angeles, Eng. 105, Walden
Nash, Howard Frank : Kalispell, Mont., Geol. 97, 318 Emerson P
Neal, Helen : Belmont, Engl. 7, Belmont B
Nelson, Hans Christian : Fields Landing, Pre L. 72, 130 Encina
Nesbitt, Chetanna Maud : Vallejo, Hist. 6, 2 Salvatierra
Nesbitt, Mabel Irene : Vallejo, Draw. 19, 2 Salvatierra
Newberg, Lucile J. : San Bernardino, Hist. 100, Walden

Newcomer, Erval Jackson : Palo Alto, Ent. 43, Forest Court P
Newlin, Myrtle Alverson : Fresno, Lat. 108, 28 Madrono
Newman, Carl Emory : Madera, Chem. 5, Theta Delta Chi
Newman, Willard Hodges : San Diego, Pre L. 11, 194 Encina
[1]Newton, Douglass Erle : Woodbridge, Hist. 31, 121 Encina
Nichols, Owen H. : Boone, Neb., E. E. sp. 10, Welakahao Club
Nimmo, Leroy Coon : Los Angeles, E. E. 71, Phi Gamma Delta
Noble, Isabel Blake : Fresno, Lat. 45, Pi Beta Phi
Nolan, Edward Dana : San Luis Obispo, Geol. 30, 145 Encina
[1]Nomoto, Aranoske : San Francisco, C. E. sp. 19, Japanese Club
North, William Cuyler : Cupertino, E. E. 111, Cupertino C
Norton, Ione May : Rialto, Lat. 102, 9 Roble
Norwood, Clifford Taylor : Redlands, M. E. 89, 52 Encina
Nunan, Cyril Raymond : Stockton, Pre L. 11, Phi Delta Theta
Oakey, John Miller : San Bernardino, C. E. 89, 54 Encina
Obayashi, Fukuzo : Tokyo, Japan, Zool. sp. 37, 14 Alvarado
Obear, Maurice : St. Louis, Mo., C. E. sp. 4, Beta Theta Pi
[1]O'Brien, Ethel R. : Merced, Engl. 13, 42 Roble
Ochsner, Washington H. : Lexington, Ky., Geol. gr., Lotus Club P
A. B., Stanford, 1909.
[2]O'Donnell, Bernard Julius : San Luis O., Engl., sp., College Terrace
Ogilvie, Paul Morgan : Los Angeles, Pre L. 42, Sigma Chi
Ohashi, Yasu-Saburo : San Francisco, E. E. 35, 214 University P
Oldham, John Henry : Ocean Park, Phyl. 31, 21 Lasuen
[2]Oliver, Frederick Hartman : Clinton, Ill., Geol. sp., 18, Delta Upsilon
Oliver, Jean Redman : Chico, Phyl. 41, 21 Lasuen
Olson, Ernest Morus : San Jose, Chem. sp. 7, 202N.14th,S.J.,S
Olsson-Seffer, Ragnar M. : Fruitvale, Phyl. gr., 112 Circle P
A. B., Helsingfors and Upsala, 1900.
[1]Olsson-Seffer, Runar Ivar : Fruitvale, Bot. 10, 112 Circle P
Oltmans, Jacob O. : Melvin, Ill., C. E. 83, 318 Emerson
Oppenheimer, Sade : Spokane, Wash., Engl. 90, 27 Roble
Orr, Florence Jennings : San Francisco, Hist. 7, Kappa K. Gamma
Osborn, Mabelle Frances : Denver, Colo., Frn. 109, 11 Salvatierra
Osborne, Clarence Bristol : Los Angeles, Geol. 125, 106 Encina
Osborne, Mattie Rankin : Santa Barbara, Engl. 104, 2 Salvatierra
Osgood, Marion : San Jose, Germ. 101, La Camaraderie
Ostroski, Herbert M. : Spokane, Wash., Hist. 88, 59 Encina
Otis, Arthur Sinton : Pasadena, Psych. 77, 21 Encina
Otto, Lucile Elizabeth : San Francisco, Germ. 105, 23 Roble
Overman, Ruth : Santa Barbara, Draw. 13, 11 Salvatierra

[1]Owen, Elise Dorrance : Stockton, A. B., Stanford, 1907. Hist. gr., Gamma Phi Beta
Owen, Henry Dorrance : Stockton, C. E. 32, Sigma Chi
Ozier, Margaret Lucille : Los Angeles, Engl. 74, Kappa A. Theta
Packard, Henry Jessup : Ontario, Geol. 35, 91 Encina
Paine, John Howard : Palo Alto, Zool. 9, 505 Homer P
Paine, Russell : Redlands, Phyl. 35, 42 Encina
Palmer, Ethel Rebecca : Los Angeles, Engl. 70, Gamma Phi Beta
Palmer, Fred Ellsworth : San Francisco, Econ. sp. 15, S. A. Epsilon
[1]Pande, Ghola De: Dehra Dun, U.P., India, Ent. † 7, 602 Waverley P
Park, Charles V. : Kidder, Mo., Econ. 105, Faculty Club Hs
Park, Harriet : Palo Alto, Draw. 57, 16 Alvarado
Parker, Franklin Thomas : Astoria, Ore., E. E. 74, 10 Encina
[2]Parkinson, Katharine Maze : Palo Alto, Germ., 1101 University, P
Parsons, Benjamin Everett : Highland, Geol. 49, 151 Encina
[1]Parsons, Maurice Giesy : Claremont, C. E. 74, Encina
Parton, Floyd A. : San Jose, Bot. 76, Phi Kappa Psi
Partridge, John Frederick : Menlo Park, C. E. 15, S. Alpha Epsilon
[2]Patrick, Howard Borland : Visalia, Econ.†29, Phi Gamma Delta
Patterson, Edith Woodburn : San Jose, Educ. 104, 18 Roble
Patterson, Ella Jane : Long Beach, Hist. 109, 16 Alvarado
Patterson, William Herbert : Palo Alto, Pre L. 71, Palo Alto P
[1]Paul, Byron H. : Alameda, Bot. 10, Kappa Alpha
Peabody, Clarence Carlyn : Ontario, Chem. 13, Sigma Chi
Peake, Alonzo William : Azusa, Geol. 13, 199 Encina
Pearce, Ellen Rose : Hilo, Hawaii, Lat. 68, 425 Tasso P
Peaslee, W. Dhu Aine : Blue Canyon, E. E. 73, 667 Lincoln P
[2]Peck, Sedley Clarendale : Compton, Pre L., 10, Sigma Chi
Peckham, Arthur Bixie : San Jose, Geol. 42, 74 N. 12th, S. J., S
Peckham, Ignatius Martin : San Jose, Pre L. 42, 74 N.12th, S. J., S
Pelton, Herbert Edmun : Reno, Nev., E. E. 16, 602 Cowper P
[1]Pemberton, Cyril E. : Palo Alto, Bot. 74, 846 Bryant P
Pemberton, John Rothwell : Palo Alto, Geol. 132, 846 Bryant P
Perdew, William Edward : Visalia, Chem. 50, 141 Encina
Perkins, Ethel Mary : Palo Alto, Zool. 106, 451 Channing P
Perkins, Genevieve Hazel : Palo Alto, Zool. 106, 451 Channing P
[1]Perring, Anna Louise : Palo Alto, Germ. 62, 737 Bryant P
Perry, George Dorn : Sandusky, Ohio, Econ. 39, 334 Waverley P
[2]Perry, Wilfred Sprague. Waterbury, Con., Econ. 108, Encina
Person, Harry Robert : Redlands, Pre L. 8, 184 Encina
Peterson, Clarence J. : Honolulu, H. T., Geol. 110, 46 Encina

Peterson, Elsa : Honolulu, H. T., Bot. gr., 53 Roble
A. B., Stanford, 1909.
Pettigrew, Paul Fred'd : Sioux Falls, S. D., Chem. † 8, Phi Kappa Psi
Phelps, Clarence Lucien : Jamestown, Ky., Educ. 99, Homerian Hall
Phillips, Marie Angelita : Los Angeles, Engl. 20, Delta Gamma
Phinney, Marion N. : Redlands, Zool. 12, La Camaraderie
[2]Pickett, Pauline : Mare Island, Engl. gr., 2 Roble
A. B., Southern University, 1901, A. M., 1902.
Pieper, James Frederick : Palo Alto, C. E. 110, 1029 Ramona P
Pierce, Eunice Hale : San Diego, Frn. 12, Kappa Alpha Theta
Piggott, Helen Winifred : San Luis Obispo, Hist. 46, Delta Delta Delta
Pingree, Louis William : Ogden, Utah, Chem. 10, 12 Alvarado
Piper, Merle Bentley : San Francisco, C. E. 73, Pine Cottage
Pittenger, Walter Ralph : Fallbrook, Econ. 18, 29 Encina
Pixley, Alma : Orange, Germ. 45, Madrono
Plaskett, Frank Waldo : Salinas, M. E. 48, 334 Cowper P
[1]Poage, Johanna Lelia : Azusa, Math. gr., 2 Salvatierra
A. B., Stanford, 1907.
Poindexter, Robert W., Jr. : Los Angeles, Chem. 63, 176 Encina
Polhemus, Edward R. : San Francisco, Econ. 14, S. Alpha Epsilon
Polhemus, James Henry : Portland, Ore., C. E. 67, Kappa Sigma
Polson, George Washington : Menlo Park, E. E. 2, Menlo Park M
Pomeroy, Frank Kenneth : Palo Alto, Phyl. 32, 947 Waverley P
Poor, Henry Varnum : Kansas City, Mo., Draw. 80, 153 Encina
Porter, Estelle Caswell : San Fernando, Engl. 47, Alpha Phi
Porter, William Stratton : Santa Barbara, Pre L. 34, 29 Encina
Post, Fred Dan : Rockford, Ill., Chem. 53, 191 Encina
Post, Henry Bolton : Palo Alto, C. E. 15, 515 Everett P
Postma, George Ezinha : Muncie, Ind., Chem. 15, 219 Ramona P
Powell, Ellis Eli : Eureka, Pre L. † 8, Welakahao
Pratt, James Hamilton : Honolulu, H. T., Chem. 94, 80 Encina
Preciado, Abram A. : Madera, Pre L. 68, 126 Encina
[2]Preisker, Ernest Charles : Milpitas, Pre L., 70, 338 N. 2d, S J. S
[2]Presley, George J. : Berkeley, Law gr., Encina
A. B., Stanford, 1907.
[2]Price, Edgar Heaton, San Bernardino, Educ. gr., Palo Alto P
A. B., Drury College, 1895; A. M., Yale Univ., 1903.
Price, Harry Lawrence : San Diego, Pre L. 105, 66 Encina
Pridham, Edwin Stewart : Chicago, Ill., Phys. 124, 89 Encina
Prince, Ferd, Jr., : Orange, Econ. 27, Snell Club
Prout, Franklin Stanton : Palo Alto, Geol. 36, 117 Greenwood P

Pruett, John Floyd : Fallbrook, Phyl. 106, 180 Encina
[1]Pruitt, Drew, Jr. : Los Angeles, M. E. 66, 549 Cowper P
Purcell, Charles Dean : Stanford Univ., Law sp. 28½, 8 Alvarado
Purvis, Frank Reeves : Redlands, Geol. 42, Welakahao Club
Quandt, Iola Beatrice : Santa Monica, Germ. 103, 2 Roble
[1]Quigley, Harold Locke : Boise, Idaho, C. E. sp. 3, Palo Alto Ave
Quinn, William Arthur : Henderson, Ky., Econ. 19, Kappa Alpha
[2]Raines, Herbert : Campbell, E. E., 31, College Terrace
Ramsdell, Fred Stanley : Palo Alto, Educ. 3, 704 Bryant P
Ramsdell, Harvest Richard : Kent, C. E. 62, 38 Encina
[1]Rand, Chester : Los Angeles, E. E. sp. 42, College Terr'ce
Randall, Charles Alfred : Redding, Geol. sp. 123, 109 Encina
Randall, Josephine Dows : Stanford Univ., Zool. 103, 30 Madrono
Rankin, Fanny Belle : Petaluma, Hist. 9, Madrono
Ransom, Charles K. : Anaheim, E. E. 79, 69 Encina
Rawles, Wesley Mock : Boonville, Geol. 39, 9a Salvatierra
Rawson, James Peterson : Hemet, Educ. 82, 629 Emerson P
Rayburn, Donald W. : Los Angeles, Pre L. 10, 8 Alvarado
Rea, Elizabeth Tully : Gilroy, Hist. 44, Madrono
Read, Bill : Somerfield, Pa., C. E. 136, 139 Encina
[1]Reagan, Albert B. : La Push, Wash., Geol. gr., Circle P
A. M., University of Indiana, 1904.
[2]Reed, Harold Eugene : Portland, Ore., Econ., 24, Kappa Sigma
Reed, Harry Earle : Lamont, Okla., Econ. 50, 31 Salvatierra
Reene, Jane Elinor : San Jose, Engl. 40, 741 S. 3d, S.J., S
Reighard, James Gamble: Pasadena, Engl. 34, 351 Homer P
Reineman, Lester Albert : Pasadena, Geol. 12, Welakahao Club
Remington, Arthur E. : Watertown, N. Y., Geol. sp. 5, 5 Lasuen
Reyburn, Glenn William : Fresno, Phyl. 85, 180 Encina
Reynolds, John Lynn : Santa Barbara, M. E. 13, 196 Encina
Reynolds, Leon Benedict : Palo Alto, C. E. gr., 712 Bryant P
A. B., Hillsdale College, 1906.
Reynolds, Ralph Hubbard : Pasadena, Pre L. 56, Zeta Psi
[1]Rhines, Charles Auborn : Visalia, E. E. 33, 141 Encina
Rible, Blanch : Sacramento, Greek 57, 14 Salvatierra
Rible, Lillie May : Sacramento, Engl. 82, 14 Salvatierra
Rice, Edward Waldo : Fallbrook, Chem. sp. 144, 9a Salvatierra
Rice, Warren Sumner : Edenvale, Geol. 107, 134 E Julian,SJ,S
[1]Rich, Juliet Gladys : Los Angeles, Engl. 14, 2 Salvatierra
Rich, Willis H. : Los Angeles, Zool. 103, 19 Alvarado
Richardson, Charles H., Jr. : Pasadena, Zool. 15, Encina

Richardson, Eulalia : Tropico, Phys. 70, 22 Roble
Richardson, Girard Nye : Piedmont, Pre L. 96, D. K. Epsilon
[1]Riddell, John Henry : Brazil, Ind., C. E. gr., 68 Encina
A. B., Stanford, 1909.
Righter, George Lutes : Campbell, Econ. 9, 154 Encina
Rittenhouse, Catherine : Min'ap'l's, Minn., Engl. 96, Alpha Phi
Rittigstein, Herman : Oakland, Pre L. 47, 84 Encina
[1]Rivers, Henry E. : Los Angeles, Econ. 10, Delta Tau Delta
Rixford, Halsey Luther : San Francisco, Econ. 97, D. K. Epsilon
[1]Robbins, Algie Osgood : Stockton, Hist., 334 Lincoln P
[1]Robbins, Charles Harvey : Berkeley, Pre L. 16, Phi Kappa Psi
Robbins, James Clayton : Spokane, Wash., Geol. 57, 20 Encina
Roberts, John Walter : Redlands, Econ. 36, Phi Delta Theta
Roberts, Ruberta Augusta : San Jose, Zool. 101, Pi Beta Phi
Robertson, Harry : Redwood, Chem. 94, Redwood R
Robertson, Ruth Edna : Redwood, Hist. 71, Redwood R
[1]Robertson, William Ardis : Los Angeles, Pre L. 56, 16 Salvatierra
Robinson, Ada : Carson City, Nev., Engl. 13, 40 Roble
Robinson, Edith Emma : Salinas, Lat. gr., 1010 Bryant P
A. B., Stanford, 1908.
Robinson, Ethel Margaret : Ventura, Math. 99, 13 Roble
Robinson, Landon McGee : Louisville, Ky., Engl. 9, Sigma Chi
Robinson, Philip A. : San Francisco, E. E. 67, 11 Encina
[1]Rodgers, George Leigh : San Jose, E. E. 5, Delta Tau Delta
Rogers, Edwin Allan : Palo Alto, M. E. 91, 612 WaverleySt.P
Rogers, Herbert Thomas : San Jose, E.E.62, 381 San Salvador,S.J
Roll, Julia Irene : Santa Clara, Germ. 74, 10 Alvarado
Rose, Jessie Perkins : Ashland, Ore., Bot. gr., 706 Cowper P
A. B., Stanford, 1909.
Rosenkranz, Elias Victor : Los Angeles, Pre L. 63, 545 Bryant P
[1]Ross, Harry Scott : Pasadena, Chem. gr., Delta Upsilon
A. B., Stanford, 1909.
Ross, Perley Ason : Fallbrook, Phys. gr., 157 Encina
A. B., Stanford, 1908.
Ross, Robert B. : Los Angeles, Econ. 13, Sigma Nu
Rosse, Hermann : The Hague, Holland, Draw. sp. 15, 750 Bryant P
Roth, Almon Edward : Ukiah, Pre L. 108, 9a Salvatierra
Rounds, Merle Ballard : Tulsa, Okla., Econ. 49, Phi Gamma Delta
Rowe, Evelyn More : Berkeley, Zool. 51, 11 Salvatierra
Rowe, Herbert : Palo Alto, C. E. 8, 405 Emerson P
Rowe, Mary Jessamine : San Bernardino, Engl. 10, Madrono

[1]Rowell, Ola Lois : San Jose, Zool. gr., 222S.Priest, S.J.S
A. B., Stanford, 1908.
[1]Rozelle, Cyrus Thompson : Coalinga, Pre L. 7, 5 Lasuen
[2]Rumsey, Ethel Gertrude : Napa, Frn., 324 Emerson, P
Runyon, John Howard : San Jose, Geol. 90, 312 E SClara,SJ, S
Rush, Benjamin : Suisun, Pre L. 8, Welakahao Club
Russell, Frank M., Jr. : Pasadena, Econ. 7, Encina
Russell, Henrietta Elizabeth : Tulare, Lat. 114, K. A. Theta
Rutherford, Dorsey Jay : Pomona, C. E. 30, 11 Encina
[2]Rutherford, Wm. Robert, San Francisco, Educ., 92 Encina
Rutledge, John D. : Emmettsburg, Ia., Law sp. 36, Delta Upsilon
Ryan, Clarissa Maud : San Jose, Draw. 11, 43 Roble
*[1]Ryan, John Joseph : San Jose, Hist. gr., 201 W.S.Fer'do,SJ
A. B., Stanford, 1903, A. M., 1904.
Ryerson, Regina : Sunnyvale, Hist. 10, Sunnyvale S
[1]Ryland, Reis Joseph : San Jose, C. E. 3, 443 N. 2d, S. J., S
Ryus, David Denslow, Jr. : Los Angeles, C. E. sp. 8, 21 Salvatierra
St. John, Royal Upson : Benicia, C. E. 47, 3 Encina
Sales, Dudley Daniel : Denver, Colo., Law gr., S. A. Epsilon
A. B., Stanford, 1906.
Salisbury, Charles Scott : Los Angeles, Phyl. † 8, Delta Upsilon
Salisbury, Harold Emerson : Monrovia, Draw. 9, 3 Lasuen
[1]Sample, Roy O. : Fredericktown, Mo., Math., 840 Bryant P
Sampson, Carlos Eugene : Stockton, E. E. 88, D. K. Epsilon
Sampson, Ruth Adele : San Diego, Engl. 40, 19 Madrono
Sanborn, Augustus Mudge : Redlands, M. E. 15, Phi Delta Theta
Sanborn, Clarence Blaisdel : Fruitvale, M. E., S. A. Epsilon
Sanborn, Ralph Edward : Yuba City, Chem. 40, Chi Psi
Sanborn, Thomas : Redlands, C. E. 15, Phi Delta Theta
Sandoe, Fannie B. : Marshalltown, Ia., Draw. 109, Madrono
Sanstedt, Carl Edward : Spangle, Wash., C. E. 72, The Inn
Sawyer, Ernest Walker : Los Angeles, C. E. 115, 167 Encina
[2]Sayre, Marjorie Antoinette : Tacoma, Wn., Frn., 11 Salvatierra
Sbarboro, Remo Earl : San Francisco, C. E. 11, S. A. Epsilon
Schaupp, Carl Louis : Santa Rosa, Phyl. 15, Phi Gamma Delta
Scheele, Norbert : Palo Alto, Germ. 45, 431 Kipling P
Schellinger, Alfred Kirk : De Ruyter, N.Y., Geol. 110, 533 Ramona P
Schmidt, Henry Emil : Redlands, Law 26, 101 Encina
Schnack, Adolph G. C. : Honolulu, H. T., Chem. 85, 4 Encina
Schoenheit, Sophie Edith : San Jose, Germ. gr., 73E.Julian,S.J.S
A. B., Stanford, 1902.

* Died March 8, 1909.

Scholefield, Crighton Welch : Hollister, M. E. 42, 24 Encina
[1]Schutz, Charles Henry : Los Angeles, Germ. 4, Chi Psi
[2]Schuyler, Howard Irving : Auburn, N. Y., Chem., 405 Emerson, P
Schwennesen, Alvin Theodore : Clayton, Geol. 113, 24 Encina
Scofield, Frank Alson : Dunnigan, Hist. 42, 92 Encina
Scofield, William Launcelot : Palo Alto, Bot. 58, 153 Encina
Scott, Leland : Alameda, Draw. 75, D. K. Epsilon
Scudder, Gertrude Louise : Moss, Hist. 43, 52 Roble
[2]Scull, Carolyne Beatrice : Santa Barbara, Engl., 65, 938 Scott, P
Sears, Harry Johnson : Kidder, Mo., Chem. 65, 51 Encina
Sears, Jesse Brundage : Kidder, Mo., Educ. 102, 1533 Waverley P
Seeley, Marjory : Los Gatos, Hist. 38, 52 Roble
Sepulveda, Harry Barnes : Alameda, Econ. 13, Chi Psi
Seward, Laura Echo : Long Beach, Math. gr., 34 Roble
B. L., Pomona College, 1908.
Seward, Richard Henry : Los Angeles, Hist. 10, Delta Upsilon
[1]Sferlazzo, Carlo : Mayfield, Law sp. 40, Mayfield M
Shanklin, Nathan, Jr. : San Luis Obispo, Pre L. 6, College Terrace
Sharp, Homer J. : Long Beach, C. E. 76, 54 Encina
Shattuck, Charles Henry : Alameda, M. E. 15, D. K. Epsilon
Shaver, Ethel Gertrude : Fresno, Germ. 10, Alpha Phi
Shaw, Frances Lilian : Nordhoff, Hist. 10, 11 Salvatierra
Shaw, Jock Brown : Victoria, B. C., C. E. sp. 11, 235 Emerson P
Shaw, Rea Warnock : San Jose, Econ: sp. 12, Chi Psi
Shaw, Sidney Burton : Campbell, E. E. 11, 154 Encina
Shelby, Ada Catherine : Denver, Colo., Chem. gr., 251 Emerson, P
A. B., University of Kansas, 1909.
[1]Sheldon, Edwin Rowley : Palo Alto, Pre L. 43, Sigma Nu
Sheldon, Josephine Wilmarth : Gilroy, Germ. 35, La Camaraderie
Shelton, James Errett : San Jose, Pre L. 71, Stanford Inn
Shelton, William Cortez : San Jose, Law gr., Stanford Inn
A. B., Stanford, 1908.
Shepardson, Anita Arline : Los Angeles, Hist. 67, 31 Roble
Sherfy, Samuel Hash : Blountville, Tenn., Bot. 105, 20 Alvarado
Sherman, Harold Meredith : Redlands, Pre L. 8, 42 Encina
Shinn, Alice Eleanor : Oakland, Engl. 85, Walden
Shoemaker, Benjamin Dey : Pasadena, Chem. 72, 40 Encina
Shoemaker, Clyde Clarence : Orange, Pre L. 71, 77 Encina
[1]Shoemaker, Charles C.: Silver City, N.M., Pre L. 3, 5 Lasuen
Show, Esther Winifred W. : Palo Alto, Engl. 7, 353 Melville P
[1]Show, Stuart Bevier : Palo Alto, Bot. gr., 353 Melville P
A. B., Stanford, 1909.

Shumate, Anna Matt : Palo Alto, Hist. 76, Alpha Phi
Shutts, Arthur Burton : Palo Alto, Geol. gr., Acacia
A. B., Stanford, 1909.
Sidwell, Wilson : Springville, Ia., C. E. 118, 182 Encina
Sieber, Bertha Wilhelmina : Woodland, Lat. 15, Madrono
Siefert, Alfred L. Camille : Pasadena, Phyl. 58, College Terrace
Sillers, Stansmore Donald : Chico, E. E. 66, 74 Encina
Simons, Ada Beatrice : Fresno, Engl. 8, 66 Roble
Simpson, Ashleigh Brown : San Francisco, C. E. sp. 8, S. A. Epsilon
[1]Sinnard, Elvin Orestus : Ft. Collins, Colo., Law, 707 Bryant P
Sipes, Gail J. : Oklahoma City, Okla., Engl. 32, 415 Florence P
[1]Sircar, Anath Bandhu : San Francisco, Math. sp. 10, Palo Alto
Sirdevan, William Henry : Olean, N. Y., Geol. 126, 107 Encina
[1]Skaife, Mary : San Francisco, Engl. 11, Alpha Phi
Skolfield, Esther May : Portland, Ore., Phyl. 47, La Camaraderie
Slack, Walter : Juniata, Neb., Pre L. 96, 102 Encina
Slawson, Dora Gay : Townsend, Mont., Engl. 10, 324 Emerson P
Small, Horatio L. : Palo Alto, Geol. 25, 334 Cowper P
Smallpage, Lafayette John : Pacific Grove, Pre L. 102, 125 Encina
Smart, Ornan Bridges : Long Beach, Geol. 5, S. A. Epsilon
Smith, Avis K. : San Luis Obispo, Greek gr., 25 Roble
A. B., Stanford, 1907.
Smith, Caroline Ettella : Los Angeles, Engl. 74, Madrono
[2]Smith, Clyde Lewis : Fresno, E. E. sp., 335 Lytton ave
Smith, David Drake : Ocean Park, C. E. 62, 127 Encina
[1]Smith, Egbert Alling : Napa, Pre L. 86, 429 Forest P
Smith, Felita Mary : Fresno, Educ. 14, 46 Roble
[1]Smith, George Miner : The Palms, Pre L. 64, 405 Emerson P
[2]Smith, Grover Cleveland : Colton, Draw., 28, 318 Emerson, P
Smith, Harry Ellsworth : Saratoga, Pre L. 65, 134 Encina
[1]Smith, Harry Tisue : Orange, Engl. sp. 7, Kappa Alpha
Smith, Hazel Gladys : Palo Alto, Greek 74, 327 Cowper P
[2]Smith, Howard Warren : Palo Alto, Draw., 327 Cowper, P
Smith, Lucas F., Jr. : Santa Cruz, Educ. 77, Kappa Sigma
Smith, Leon Neil C. : Washington, D. C., M. E. 41, Sigma Nu
Smith, Mildred : Redwood, Rom. Lang. gr., Redwood R
A. B., Stanford, 1907.
Smith, Richard Garbett : Los Angeles, Geol. 128, 13 Encina
Smith, Robert Lewis : Hemet, Chem. † 14, 19 Alvarado
[1]Smith, Russell L. : Bloomfield, E. E. sp. 7, Welakahao Club
[1]Smith, Stanley Bassett : Campbell, Econ. 34, 31 Encina

Smith, Walter Olney : Fresno, Geol. gr., College Terrace
Ph. B., Iowa College, 1907.
Smith, Warren Perce : Portland, Ore., E. E. 126, 167 Encina
Smith, William Taylor : San Diego, E. E. 8, Phi Kappa Psi
Smitherum, Harrison : San Jose, C. E. 42, 19 Encina
[1]Sneed, Earl Everett : San Jose, Pre L.10, 404S.Whitney,SJ,S
Snell, Thomas William : West Saticoy, E. E. 46, 44 Encina
[2]Sobey, Hazel : San Francisco, Frn., Delta Gamma
[2]Somers, Helen Louise : Hollywood, Engl., 1 Alvarado
Sontheimer, Urban Alexander : San Jose, Pre L. 12, 97 Auzerais,S.J.S
Soo-Hoo, Peter : San Rafael, C. E. 106, 20 Alvarado
Soper, Ralph Hamilton : Palo Alto, Geol. 13, Box 131 P
Soult, Harold Houser : Osborne, Kan., C. E. gr., 804 Bryant P
A. B., Washburn College, 1907.
Southard, Grace Georganne : Redlands, Germ. 15, Gamma Phi Beta
Southard, William White : Redlands, Phyl. 76, 49 Encina
[1]Spafford, Lewis Harold : Fowler, M. E. 8, Chi Psi
Spalding, Helen Godfrey : Los Angeles, Engl. 12, Kappa A. Theta
[2]Specht, Ida Louise : Rockwell, Ia., Math., 329 High, P
Spencer, Esther Jean : Palo Alto, Lat. gr., 233 Addison P
A. B., Stanford, 1907.
[1]Spencer, Walter C. : Providence, R. I., C. E. 11, College Terrace
Spinner, Mabel Mary : Eureka, Nev., Math. gr., Roble
A. B., Stanford, 1909.
Spooner, Emma Nadieu : San Jose, Fr. 12, 203 S. 14th, S. J. S.
Squire, Caroline Elizabeth : Palo Alto, Germ., 900 University P
Staber, Ernest H. : Mineral Point, Wis., Chem. 74, 136 Encina
Stafford, Kathleen : San Jose, Lat. 14, 37 Roble
Stafford, Victoria Adelaide : Chicago, Ill., Engl. 74, Pi Beta Phi
Stager, Cora Elizabeth : Montclair, N. J., Germ. gr., 532 Homer P
A. B., Stanford, 1909.
Stahl, John A. : San Francisco, Hist. 43, 16 Salvatierra
[2]Stahl, Lionel Adolf : San Francisco, Hist., 16 Salvatierra
Stanton, Frederick L. : Spokane, Wash., Pre L. 48, Phi Kappa Psi
Stark, Theodore K. : Grundy Center, Ia., Econ. 37, 832 Kipling P
Starkweather, Esther Violet : Tulare, Phyl. 11, Madrono
Starnes, Xaver Brand : Asheville, N. C., Geol. 102, 465 Hawthorne P
Starr, Sarah Helen : Seattle, Wash., Hist. 90, K. K. Gamma
Stauf, Ida : Palo Alto, Draw. 86, 454 Forest P
Stearns, Glenn Warwick : Palo Alto, M. E. 13, Box 162 PaloAlto P
[1]Stebinger, Carl Marion : Portland, Ore., E. E. †, 324 Emerson P

Steck, Louis George : Colton, Bot. 13, Encina
Steinbeck, Charles Earl : Stockton, M. E. 109, 25 Encina
Steinbeck, Grace Clare : Stockton, Bot. 47, Delta Delta Delta
Steinberger, Arthur Adolph : San Fran., Pre L. 86, 16 Salvatierra
Steinberger, Robert M. : San Francisco, Hist. 44, 16 Salvatierra
Stelle, Allen Clifford : Los Angeles, Pre L. 75, Phi Gamma Delta
[1]Stephenson, Burroughs Agin : Palo Alto, C. E. 37, 183 Lytton P
Stephenson, Rufus Town : Belmont, Greek gr., Belmont B
A. B., Drury College, 1899; A. M., Yale Univ., 1906.
Sterne, Ruth Grace : San Diego, Germ. 102, Pi Beta Phi
Stevens, Archie McDonald : Palo Alto, M. E. 112, 926 Cowper P
[1]Stevens, Ralph Partridge : Palo Alto, M. E. sp. 4, 829 Emerson P
Stewart, Edwin John : Riverside, Geol. 6, 5 Lasuen
Stewart, James : Chico, E. E. 10, Lotus Club P
Stewart. John Elmer : Stanford Univ., Law gr., 50 Encina
A. B., Stanford, 1908.
[1]Stewart, Milton Sheldon : Santa Barbara, Geol. 73, 405 Emerson P
Stewart, Royal Minton : Reno, Nev., Geol. 6, 5 Lasuen
Stewart, Spurgeon Downville : La Mesa, Law, gr., Encina
Ph. D., Hamline University, 1905.
Stidston, Russell Osborne : Los Gatos, Engl. 48, Los Gatos L
Stillman, Dorothy M. : Stanford Univ., Engl. 13, 2 Alvarado
Stinson, Sylvia Della : Palo Alto, Germ. 102, 1229 Webster P
[1]Stock, Lester Howard : San Jose, C. E. 10, 117 Vine, S. J. S
[2]Stockman, Jay H. : Los Angeles, Law gr., 4 Lasuen
A. B., University of Utah, 1908.
Stockwell, Eugene L. : Stanford Univ., Law, gr., Theta Delta Chi
A. B., Stanford, 1908.
[2]Stoll, Leland Clyde : Sacramento, Pre L., Phi Gamma Delta
Stolle, Francis : Palo Alto, Phyl. 72, 683 Hamilton P
Stolz, Herbert Rowell : Redlands, Phyl. 63, 222 Kingsley
Stone, Alta Dorthula : Tropico, Phys. 73, 611 Waverley P
[2]Stone, Herbert : Martinez, Geol. sp., 16 Salvatierra
Stover, Roy Bales : San Diego, Pre L. 110, 750 Bryant P
Strachan, Nina Margaret : Palo Alto, Zool. 38, 422 Tasso P
Streeter, Olive Louisa : Cupertino, Hist. gr., 1121 Bryant P
A. B., Stanford, 1908.
[2]Strong, Malcolm W. : Plainfield, N. J., Engl., 2, Beta Theta Pi
Stuart, Mary Virginia : Redlands, Math. 44, La Camaraderie
[2]Stull, Karl Madsen : San Jose, Econ., 23, 426 N.1st, S J, S
Sturla, Rose Florence : Mountain View, Hist. 78, Mountain View M

Sudden, Ruth Catherine : Ventura,	Hist. 10,	Madrono
Sugars, Nell Muriel : Los Angeles,	Phys. 11,	325 Kipling P
Summerfield, Lester Douglas : Reno, Nev.,	Pre L. 9,	5 Lasuen
Sundell, Alfred Luis : Alameda,	Geol. 11,	D. K. Epsilon
Sutliff, Nina Dinsmore : Sacramento,	Zool. 23,	Kappa Alpha Theta
Swafford, Henry Watson : Oakland,	Econ. 10,	S. A. Epsilon
Sweet, Shirley Glidden : Elbridge, N. Y.,	Econ. 99,	Phi Gamma Delta
Swickard, James Blaine : Edenvale,	C. E. 73,	104 Encina
Swift, Emeline Adelaide : Montecito,	Econ. 7,	4 Roble
Swift, Faith A. : Santa Cruz,	Germ. 15,	420 Hamilton P
Swift, May Viola : Montecito,	Math. 109,	2 Salvatierra
Swift, Ruth : Santa Cruz, A. B., Stanford, 1908.	Germ. gr.,	420 Hamilton P
Swift, Vega : Santa Cruz, A. B., Stanford, 1908.	Eng. gr.,	420 Hamilton P
Swigart, Clyde Arthur: San Francisco,	C. E. 50,	65 Encina
Symonds, Bessie Marjorie : San Jose,	Phyl. 103,	194Webster,S.J.S
Tabor, Clarence Edward : Eureka,	C. E. 36,	119 Encina
Taggart, Arthur Fay : Stanford Univ.,	Geol. 116,	192 Encina
Taggart, James Deacon : Los Angeles,	E. E. 110,	75 Encina
Talbot, Sterling John : Pasadena.	Greek 45,	80 Encina
Talboy, Archibald Carlisle: Sioux City, Ia.,	Pre L. 41,	311 Middlefield P
Talboy, Della Irene : Sioux City, Ia.,	Lat. 16,	311 Middlefield P
Talboy, William Eugene : Sioux City, Ia.,	Pre L. 39,	311 Middlefield P
Tallant, Charles Harold : Santa Barbara,	E. E. 47,	83 Encina
Tallant, Edward Percy : Santa Barbara,	E. E. 105,	83 Encina
Tate, Harriette Durant : Altadena,	Lat. 27,	Delta Gamma
[2]Taverner, Marian : Palo Alto,	Engl. †,	768 Bryant P
Taylor, Alice : Palo Alto,	Math. 10,	Alpha Phi
Taylor, Arthur : Los Angeles,	C. E. 37,	Phi Delta Theta
Taylor, Cary Peebles : Chico,	E. E. 73,	88 Encina
[2]Taylor, Charles Chappell : Selma,	C. E., 23,	Encina
Taylor, Leroy Edward : Menlo Park,	Econ. 10,	Menlo Park M
Taylor, Louis John : Los Angeles,	Geol. 41,	70 Encina
Taylor, Nelson : Los Angeles,	C. E. sp. 49,	P. Delta Theta
[1]Taylor, Walter Penn : Pasadena,	Zool. 57,	1327 Byron P
[1]Tedford, Lois Eleanor : Santa Ana,	Engl. 65,	1 Alvarado
Templeton, Eugene Crittenden : Palo Alto,	Geol. 81,	342 Homer P
Tennant, Harold M. : Rockwood City, Ia.,	Educ. † 5,	College Terrace
Terrill, Chester Charles : San Francisco,	C. E. 104,	Kappa Alpha
Theile, William C. : Emmetsburg, Ia., A. B., Stanford, 1909.	Law gr.,	Delta Upsilon

Thomas, Dan Horace : Santa Ana, Geol. 7, Chi Psi
[1]Thomas, Henriette Gilstrap : Woodland, Greek gr., Madrono
A. B., Stanford, 1909.
Thomas, Iva : South Pasadena, Lat. 112, 22 Roble
Thomas, James Carl : Los Angeles, Engl. 7, Delta Tau Delta
Thomas, William Henry : Moscow, Idaho, C. E. 51, Stanford Inn
[1]Thomasson, J. Hardy : Chico, E. E. 7, 768 Bryant St. P
[1]Thomison, Joel D.: Fayetteville, Tenn., Pre L. 78, Sigma Chi
Thompson, Alexander M. : Seattle, Wash., Pre L. 104, 190 Encina
Thompson, Della : Whittier, Lat. 96, Pi Beta Phi
Thompson, Elizabeth : Palo Alto, Engl. 90, 635 Waverley P
Thompson, Georgia Emily : San Diego, Phyl. 63, 16 Alvarado
[2]Thompson, Hannah Trainer : Pasadena, Germ., 53, 42 Roble
Thompson, Harold W. : Portland, Ore., Germ. 56, Theta Delta Chi
Thompson, James Ernest : San Jose, Pre L. 39, 65 Encina
Thompson, John Ibbotson : Pueblo, Colo., M. E. 105, 128 Encina
Thompson, Thomas West : Palo Alto, Geol. 9, 909 Alma P
Thornton, John Ray : San Jose, C. E. 52, 1234 DelmasAvSJS
Thorpe, Charles Alfred : Ioamosa, Math. 54, Beta Theta Pi
Thurmond, Blanche A. : Carpinteria, Germ. 69, 23 Roble
[1]Thurmond, Hugh Gwyn : Carpinteria, C. E. 34, 107 Encina
Tiedemann, Tudor H. A. : Alameda, Hist. 7, Phi Kappa Psi
[2]Tincher, Eugene Earl : Long Beach, Pre L., Manzanita, P
[2]Tittle, Ward Clark : Guinda, Pre L. 6, Encina
Todd, Laura : Oakland, Germ. 41, Madrono
Todd, Monette Osie : Riverside, Hist. 79, 56 Roble
[1]Todd, Ward Waldo : Santa Barbara, Phyl. 72, Chi Psi
Topham, James S. : Washington, D. C., C. E. sp. 25, 142 Encina
Tower, Mary Sherburne : San Jose, Germ. 103, 747Chapman,SJ S
[2]Towne, Gardner Bowers : Palo Alto, Econ., 8, Zeta Psi
Toy, Susan Maude : Santa Maria, Educ. 8, 333 Waverley P
[1]Tracy, Helen Morey : Pasadena, Engl. gr., 34 Roble
A. B., Stanford, 1908.
Tracy, Hiram Harwood : Chula Vista, Bot. gr., 427 Embarcadero P
B. S., Pomona College, 1908.
Tracy, Howard Sloane : Los Angeles, Pre L. 44, 172 Encina
Tsuchiya, Siusei : Pasadena, E. E. sp. 14, Japanese Club
Tsuzaki, Mitsuji : Palo Alto, E. E. sp. 11, Forest Court P
Tucker, Warren, Jr. : Redlands, Pre L. 7, 184 Encina
[1]Tully, Genevieve Morton : San Jose, Engl. 76, 63 Roble
Tully, John : San Jose, Law 55, 358 N. 7th, S J, S

Tupper, Charles Ralph : San Jose, C. E. 45, 211 S. 8th, S. J. S
[2]Tupper, James Tullius : Fresno, Pre L., 73, Sigma Chi
[1]Turley, Joseph T. : Boise, Idaho, Pre L., 2, 1248 Waverly, P
Turner, Frank Warren : Stanford Univ., Geol. sp. 127, S. A. Epsilon
[2]Turner, Thomas Norton : San Francisco, Geol.,17, Sig.AlphaEpsilon
Tuttle, John Raymond : Watertown, N. Y., Econ. 100, 525 Lincoln
Twombly, Harriet Elizabeth : Palo Alto, Chem. gr., 850 Ramona P
A. B., Stanford, 1908.
Twombly, Margaret Marie : Palo Alto, Engl. 13, 850 Ramona P
Tyler, Willard Thurston : Palo Alto, E. E. 99, 729 Waverley P
[2]Tyson, Blakely M. : New York, N. Y., Geol.,10, Sig.AlphaEpsilon
Upson, Burchell Williams : Sacramento, C. E. 73, D. K. Epsilon
Utter, Ben Watkins : Sacramento, Pre L. 68, 173 Encina
Utzinger, Otto Emile : Astoria, Ore., Phyl. 71, 10 Encina
Vail, Alida : San Francisco, Hist. 107, Alpha Phi
Valentine, Percy Friars : Sacramento, Econ. 94, Sigma Nu
Vanatta, Leon Paul : San Francisco, E. E. 35, 58 Encina
Van Dyke, Benjamin Franklin : Ukiah, Chem. 16, Entre Nous Club
Van Epps, Carolyn Mae : Palo Alto, Draw. 105, 627 Channing P
Van Etten, Percy Hixon : Palo Alto, M. E. 97, 465 Hawthorne
Van Slyck, Kenneth : El Paso, Tex., Econ. 38, 31 Encina
Van Zwalenburg, Bertha F. : Riverside, Engl. 10, Delta Delta Delta
Van Zwalenburg, Mabel E. : Riverside, Germ. 75, Delta Delta Delta
Venable, Reginald S. H. : San Francisco, Pre L. 9, College Terrace
Vickers, Joseph W. : Los Angeles, Pre L. 8, College Terrace
Vincent, Vita Grace : Oakland, Ent. 64, Kappa Alpha Theta
Visel, Jack Angele : Santa Ana, Econ. 33, Kappa Alpha
Vose, Clarence Hoy : Chicago, Ill., Pre L. 67, 67 Encina
Wada, Meitoku : San Francisco, Econ. sp. 39, Japanese Club
[2]Wada, Totara : San Francisco, Econ., 6 Aibonito ave
Wade, Benjamin Franklin : Long Beach, C. E. 67, Phi Delta Theta
Wade, Gustav : Naples, E. E. sp. 41, 170 Encina
Wadsworth, James Milton : San Jose, C. E. 81, 390 S. 5th, S. J., S
Wait, Robert Cyrus : Reynolds, Ill., Econ. 12, Sigma Chi
[1]Walbridge, Lester Sinclair : Los Angeles, Grk. gr., Beta Theta Pi
A. B., Stanford, 1909.
Waldraff, Paul Herman : San Mateo, Chem. 80, San Mateo S
Walker, Charles Glenn : Monrovia, C. E. 40, 33 Encina
Walker, David H., Jr. : San Francisco, C. E. 81, 58 Encina
Walker, Hugh Kelso, Jr. : Los Angeles, Pre L. 41, Delta Upsilon
Walker, Leland Harrison : Los Gatos, Econ. 16, Los Gatos L G

Wallace, Annie Blanche : Los Angeles, Lat. 91, 13 Roble
Wallace, Bruce : Visalia, Geol. 6, Chi Psi
Wallace, Gertrude Elizabeth : Rialto, Engl. 10, 63 Roble
Wallace, Guy : Redlands, Chem. 107, 23 Encina
Wallach, Guss Valentine : Boonville, C. E. 13, Mayfield
[1]Ward, Helen McPherson : San Diego, Engl. gr., Mantiesta
A. B., Stanford, 1908.
Ward, John McCartney : San Diego, Law gr., 122 Encina
A. B., Stanford, 1907.
Ward, Martin Luther, Jr. : San Diego, Pre L. 9, 146 Encina
Ward, Paul Philip : San Diego, Econ. 11, 141 Encina
[1]Ward, Terry Wilson : Merced, Law 31½, 5 Lasuen
Ware, Cassandra M. : Paducah, Ky., Frn. 25, 559 Cowper P
Waring, Clarence Almon : Mayfield, Geol. 30, College Terrace
Warlow, Chester Harvey : Fresno, Pre L. 33, Sigma Chi
[1]Warmoth, Lenna Jane : Berkeley, Math. gr., Delta Delta Delta
A. B., Stanford, 1908.
Warner, Eleanor S. : Palo Alto, Engl. gr., 340 Kipling P
A. B., Colorado College, 1904, A. M., 1905.
Warren, Herbert Clifton : Glendora, M. E. 73, 155 Encina
Warrick, George Fred : Santa Monica, E. E. 17, 95 Encina
Warrior, Mabel : Mayfield, Draw. 81, Evergreen Park P
Warthorst, Bertha Lydia : Bakersfield, Phys. 42, 30 Roble
Waterman, Herbert Alton : Los Angeles, C. E. 38, 19 Encina
Waters, Pearl Elizabeth : Santa Clara, Math. 12, Santa Clara S C
Watkins, Vida Mildred : Kingman, Ariz., Bot. 14, 46 Roble
Watkins, Zoe Lucile : Kingman, Ariz., Hist. 80, 44 Roble
Watters, Ethel Madelaine : Santa Cruz, Phyl. 107, 11 Salvatierra
Waugh, Clarence Wendell : Brooklyn, N.Y., Phyl. 48, 16 Salvatierra
[1]Weast, Wesley Hubert : Red Bluff, Econ. 2, Theta Delta Chi
Weaver, Emma Angeline : San Jose, Engl. 104, 141 Lipton Av. S.J., S
[1]Weaver, Stuart Eldredge : Palo Alto, M. E. 25, 335 Bryant P
Webb, Raymond Prescott : Los Angeles, C. E. 78, 52 Encina
Weeks, James Paschal : Red Bluff, C. E. 14, 536 Ramona P
Weigle, Victor Ashman : Mountain View, Econ. 12, Phi Kappa Psi
Weist, Dwight Wilson : Palo Alto, Econ. gr., 918 Ramona
B. S., Ohio State University, 1905.
Weitbrecht, George : St. Paul, Minn., Phyl. 13, 21 Lasuen
Wells, Albert Huntington : Auburn, N. Y., Chem. 45, 19 Alvarado
Wells, George Rowley : Santa Ana, C. E. 101, Encina
Wells, James Bertrand : Palo Alto, C. E. 45, 365 Guinda P

Wendling, Bessie Lee : Los Angeles, Lat. 104, Pi Beta Phi
Wendling, Florence Martha : S. Francisco, Frn. 10, K. K. Gamma
[2]Wenk, Morris : Stockton, E. E. 56, 21 Alvarado
[2]West, Edna Florence : Los Angeles, Psych., 1121 Bryant, P
Westwick, Alice Eliza : Santa Barbara, Germ. 42, 11 Salvatierra
Wetmore, Clyde T. : San Jose, Phyl. 71, 103 Encina
Weymouth, Frank Walter : Tacoma, Wn., Zool. 105, 32 Encina
Weymouth, Maud Melissa : Pasadena, Math. gr., 54 Roble
B. L., Pomona College, 1908.
Wheaton, Carl Crumbie : Palo Alto, Pre L. 42, 526 University P
[2]Wheeler, Charles Roland : Modesto, Engl., 21 Lasuen
Wheeler, Raymond Bert : Pasadena, Engl. 37, Encina
Whelan, Eva Blanche : Los Angeles, Hist. 13, 22 Lasuen
Whipple, Stephen Knight Jr. : Burlingame, C. E. 9, Burlingame B
[1]White, Helen : Alameda, Frn. 48, K. K. Gamma
[1]White, Henry Austin : Honolulu, T. H., C. E. 42, Chi Psi
White, Jessie Aline : Hope, N. Dak., Frn. 9, 19 Roble
White, John Blackwood : Spokane, Wash., Hist. 99, Phi Kappa Psi
White, Walter Noy : Los Angeles, C. E. sp. 86, 804 Bryant
[1]Whitley, Ross Emmett : Hollywood, Pre L. 22, Zeta Psi
Whitney, Clyde Carl : Santa Ana, Pre L. 10, Kappa Alpha
Wiggins, John Henry : Bennings, D. C., C. E. 53, 142 Encina
Wilbur, John King : Alhambra, E. E. 32, Delta Upsilon
Wilde, Frank Luqueer : DobbsFerry,N.Y., Geol. 52, Sigma Chi
Wiles, Coral Agnes : Chico, Engl. 14, 37 Roble
Wiley, Korah Belle : Palo Alto, Germ. 42, 543 Byron P
Wilkeson, Livingston E. : Tacoma, Wash., Geol. 9, Zeta Psi
Wilkins, Edith Amelia : Bolinas, Bot. 39, 12 Roble
Wilkins, Helen Morse : Bolinas, Engl. gr., 12 Roble
A. B., Stanford, 1909.
Williams, Florence : Hollywood, Bot. 45, 17 Roble
Wilson, Cozymine : E. Pasadena, Engl. 76, 11 Salvatierra
Wilson, Chris, Jr. : Los Angeles, Pre L. 25, 35 Encina
Wilson, Clarence John Ramsey : Anaheim, C. E. 48, 181 Encina
Wilson, Francis Goodspeed : Santa Cruz, Econ. sp. 47, Kappa Sigma
Wilson, Jas. Franklin : Little Rock, Ark., C. E. 28, 55 Encina
Wilson, Marguerite : Los Angeles, Hist. 39, 41 Roble
Wilson, Neill Compton : Oakland, Econ. 15, Delta Tau Delta
Wiltz, Lena G. : San Jose, Draw. 65, 43 Roble
[1]Wingate, Oliver Eugene : Durango, Colo., C. E. † 12, Phi Kappa Psi
Winter, Arthur Leafland : Ione, Phyl. 31, 235 Emerson P

[2]Winters, Verne William : Spokane, Wn., M. E., 15, Phi Delta Theta
Wiseman, Alta Echo : Famoso, Math. 9, 58 Roble
Wishard, Alice Mary : Des Moines, Ia., Draw. 15, 712 Bryant P
Wishard, Helen Louise : Des Moines, Ia., Engl. 10, 712 Bryant P
Wolff, Franklin Fowler : San Fernando, Math. 44, 521 Cowper P
[1]Wolff, Marcus David : San Francisco, Law gr., Stanford Univers'y
A. B., Stanford, 1906.
Wollaston, Charles Hyde : Santa Ana, C. E. 9, 4 Lasuen
Wolverton, Theron : Omaha, Neb., Phyl. 29, 35 Encina
Wondries, Charles Henry : Los Angeles, C. E. 129, Encina
[2]Wood, Barton Dixon : Merced, M. E., 24 Lasuen
Wood, Frederick Bertram : Palo Alto, Pre L. 69, 1757 Waverley P
Wood, Galen Arthur : Palo Alto, C. E. 110, 19 Alvarado
Wood, George William : Santa Cruz, Econ. 72, 31 Encina
Wood, Harold Ira : San Francisco, C. E. 16, 620 Waverley P
Wood, Mamie Etta : Whittier, Engl. 41, 542 Cowper P
[1]Woodard, Arthur Valentine : Wanamina, E. E. sp. 4, Mayfield
Woodard, John Daniel : Yolo, Econ. 109, 126 Encina
Woodcock, Elbert Cecil : Portland, Ore., E. E. 43, 145 Encina
Woodhead, Florence Miriam : Los Angeles, Phil. 51, 22 Lasuen
Woodhead, Lora Mae : Los Angeles, Zool. 55, 22 Lasuen
Woods, Ruby Claire : Long Beach, Germ. 101, 437 Webster P
Woodville, Robert : Bay City, Pre L. 30, S. A. Epsilon
[2]Woolley, James Earl : Santa Rosa, Pre L., Coyote Club
Wooster, Roy Neill : Spokane, Wash., E. E. 76, 415 Lytton P
Wormser, Mary : San Diego, Hist. 9, 1 Alvarado
Worthington, Robert Strong : Alameda, Geol. 12, 185 Encina
Wright, Adaline : Pasadena, Germ. 77, K. K. Gamma
Wright, Alfred : Los Angeles, Pre L. 52, Zeta Psi
[1]Wright, Cleveland Ross : Elko, Nev., Pre L. 56, Delta Tau Delta
[1]Wright, Hugh. : El Paso, Tex., Geol. 81, Phi Kappa Psi
[2]Wright, Katherine Hayes : Altadena, Lat., 61, 38 Roble
[2]Wright, Lester Augustus : San Diego, C. E., 7, Phi Kappa Psi
Wyant, Carlton Levi : Montecito, C. E. 11, 202 Encina
[2]Wyman, William McKee : Santa Barbara, Pre L., 21, Theta Delta Chi
[1]Yasui, Sekiji : Salinas, Econ., 208 University P
[2]Yoder, Noah S. : Palo Alto, Educ.gr., Palo Alto Hotel,P
A. B., Stanford, 1907.
Yoshida, Keiichi : Fukuoka, Japan, E. E. 107, Japanese Club
Youker, Malcolm Phillip : Santa Rosa, C. E. 58, Encina
Young, Clarence R. : Eureka, C. E. 75, Kappa Sigma

[2]Young, Frank Herbert : Ft. Jones, Econ., Theta Delta Chi
Young, Hayes Wilson : Mojave, Geol. 58, 34 Encina
Young, James Reed : Deerfield, O., Educ. 101, Entre Nous Club
B. L., Berea College, 1907.
Young, John Arthur : Los Angeles, M. E. 101, 1531 Waverley
Young, Sarah Irene : Salt Lake City, U., Engl. 13, 64 Roble
Young, Stanley Colin : Taylorsville, Pre L. 5, 5 Lasuen

SUMMARIES

Officers

Trustees		15
Faculty		
Professors	57	
Associate Professors	25	
Assistant Professors	39	
Instructors	32	
Assistants	75	
Lecturers	3	228
Other Officers		38

Students

Graduates:		
Candidates for Degree of A. M.	37	
Candidates for Degree of Engineer	2	
Candidates for Degree of J. D.	7	
Candidates for Degree of Ph. D.	1	
Not Candidates for Advanced Degrees	94	141
Undergraduates		1440
Special Students		86
Total		1667
Summer Registration	65	
Less names already counted	51	14
Total (including Summer Registration)		1681

By Major Subjects

	GRADUATE	UNDER-GRADUATE	SPECIAL	TOTAL
Greek	3	12	—	15
Latin	11	34	—	45
Germanic Languages	8	72	1	81
Romanic Languages	4	31	1	36
English	18	143	4	165
Psychology	2	4	—	6
Philosophy	1	2	—	3
Education	8	29	—	37
History	19	119	1	139
Economics and Social Science	4	129	11	144
Law	21	—	16	37
Pre Legal Course	—	211	—	211
Drawing	2	29	2	33
Mathematics	7	19	2	28
Physics	5	6	—	11
Chemistry	8	68	3	79
Botany	7	24	—	31
Physiology and Histology	1	50	4	55
Zoology	3	25	2	30
Entomology	1	8	—	9
Geology and Mining	4	112	11	127
Civil Engineering	—	152	17	169
Mechanical Engineering	—	56	7	63
Electrical Engineering	2	98	13	113

By Residence

California	1320	Minnesota	6	Arkansas	1
Washington	42	Pennsylvania	6	Connecticut	1
Oregon	28	Wisconsin	6	Michigan	1
Iowa	23	Idaho	5	North Carolina	1
New York	23	Kansas	5	North Dakota	1
Illinois	22	Nebraska	5	Rhode Island	1
Colorado	18	New Jersey	3	Japan	6
Indiana	16	Oklahoma	3	Australia	4
Utah	14	South Dakota	3	Canada	4
Hawaii	12	Maine	2	India	3
Nevada	12	Maryland	2	China	2
Missouri	10	Massachusetts	2	Bermuda Islands	1
Ohio	10	New Mexico	2	England	1
Arizona	9	Tennessee	2	Holland	1
Montana	8	Texas	2	Mexico	1
Dist. of Columbia	6	Vermont	2	Switzerland	1
Kentucky	6	Wyoming	2		

SUMMER REGISTRATION 1908

Field Geology

Bryan, Barnabas
Burtt, Payson Dodge
Chapin, Theodore
Cole, Amos Newton
Dodd, Harold Valby
Herold, Stanley Carrollton
Higley, Wynter Blain
Kramm, Hugh Edmund
Lewis, James Ogier
Osborne, Clarence Bristol
Rice, Warren Sumner
Schellinger, Alfred Kirk
Shutts, Arthur Burton
Sirdevan, William Henry
Smith, Richard Garbett
Taggart, Arthur Fay

Marine Biological Laboratory.

1. *Occupying Investigators' Rooms*

Bateman, William George, A. B., Instructor in Chemistry, Stanford University

Clapp, Cornelia M., Ph. D., Professor of Zoology, Mt. Holyoke College

Spaulding, Milo Herrick, A. B., Assistant Professor of Zoology, Montana State College of Agriculture and Mechanic Arts.

Swain, Robert Eckles, Ph. D., Associate Professor of Chemistry, Stanford University

Taking Regular Courses

Abright, Anne Pauline
Alvord, John Hartwell
Bairos, Manuel Benjamin
Breton, Edith Lillian
Burbank, Daniel Wellman
Christin, Charles Alfred
Clay, Mabel Adalene
Cox, Lester Everett
Curry, Bessie Alberta
Cuthbertson, Alexander M.
Davis, Edna Grace
Fairclough, Katrine : Harker S.
Frank, Lester Letivitch
Fuller, William Parmer, Jr.
Galvin, Reba R. : Univ. of Cal.
Gerard, Bess
Hatfield, George Juan
Jackson, Frank Kennedy
Janney, Emily, A.B. : U. of Minn.
Jenkins, Alice Mabel
Jenkins, Olaf P. : Palo Alto H.S.
Kirkwood, Marion Rice
Leonard, Florence A.
Levy, Joe Paul
Luchsinger, Albert G.
McAllister, Stella
McKee, Bessie Willoughby
McPheeters, George Carl H.
Matchette, Orral
Mills, J. H.
Moon, Harry A. : Seattle H. S.
Murdoch, Effie Lisle
Osborn, Mabelle Frances
Ostroski, Herbert M.
Palmer, Fred E.
Perkins, Ethel Mary
Perkins, Genevieve Hazel
Peterson, Elsa
Pomeroy, Frank Kenneth
Rea, Elizabeth Tully
Reining, Charles
Reyburn, Glenn William
Sheldon, Edwin Rowley
Thompson, Elizabeth
Wiltz, Bertha Amelia, A. B.

DEGREES CONFERRED

May, 1908, *January 10, 1908.

BACHELOR OF ARTS

GREEK

Lucy Elizabeth Howell
Beth Hughson
Margaret Elizabeth MacCormac

LATIN

Elizabeth Sophia Burritt
James Grant Fergusson
Flora Edna Gibson
Marie Otillie Hedum
Delia Mae Hull
Maud Ethel Huntsberger
Marjorie Hadley Little
Eva Pearsall
Edith Emma Robinson
Alice Louise Roedel
Gertrude M. Thomas
Emma-Jean Wilson

GERMANIC LANGUAGES

Edna Lucile Brown
Jennie Ethel Clithero
Julia Derby
Alice Hermine Gabel
Mildred Halsey
Coralyn Hazen
Lillian Marie Miller
Ethel Elizabeth Rowe
Helen Stolle
Ruth Swift
Elizabeth Agnes Wright

ROMANIC LANGUAGES

May Alice Cunningham
Edna May Davis
Josephine Dillon
Edna May Robotham

ENGLISH

Mabel Aldridge
Julia May Bailiff
Caroline Benson
Genevieve Boothe
Catherine Margaret Brohaska
Antoinette Crawford
Pauline Gartzmann
Earl Jonathan Hadley
Eva Lois Hayslip
Elizabeth Hislop
Olive Knipe
Ethel R. Ludwig
Amy Genevieve Luke
Calla Rhetta Milliken
Edith May Purdum
Marion Leigh Seybolt
Viola Alice Steele
Vega Swift
Helen Morey Tracy
Helen McPherson Ward

EDUCATION

Eldredge Bachman Dykes
Harlow Verne Greenwood

HISTORY

Myrtle Elizabeth Amick
Elsie Branner
Claudia L. Clark
May Alice Dunn
Davida Catherine French
Alice Agnes Hutchins
Charlotte Jane Kelley
Harriet Holmes Pugh
Olive Louisa Streeter
Ethel Wallace
Irma Julia Zschokke

ECONOMICS AND SOCIAL SCIENCE

Morgan Orland Adams
George Ethelbert Dole
James Evans Montgomery
Leland Starke Poage
Clarence Charles Sanborn
George Otis Spurrier
Edward Canfield Sterling
John Katsukichi Yasuda

PRE-LEGAL COURSE

Gertrude Albrecht
Lyman Hakes Bennett
Robert Henry Borland
Norris Pinkney Bryan
Henry Guy Carleton
Wallis Fearnside Eastham
Henry Nelson French
Di Margaret Gardner
Gerald C. Halsey
Robert Henry Hudson
Newton Alexander Johnson, Jr.
Egerton Drew Lakin
Dal Millington Lemmon
Isadore Melczer
Robert Bivins Murphey
Arthur Alban Murphy
Lloyd Newland
John Franklin Reilly
Ferdinand John Henry Schnack
William Cortez Shelton
John Elmer Stewart
Paul Stewart
Eugene Lafayette Stockwell
William Henry Tucker

DRAWING

Clara Dooner

MATHEMATICS

Elizabeth Melvina Andrews
Mary Elizabeth Bille
Pearl Myrtle Horn
Paul Willard Merrill
Lenna Jane Warmoth

PHYSICS

Harry Carleton Burbridge
George Francis McEwen
Perley Ason Ross

CHEMISTRY

Nathan Powell Barbour
Alice Ruth Berger
John Franklin Ellis
Claude Ferguson
William Stanley Gebb
Robert Alton Jones
Roy Seldon Kellogg
Lovell Langstroth
Harold Blair Menardi
Jacob Meday Price
Frederic Garfield Ransom
Samuel Isaac Schwabacher
James Anthony Tays

BOTANY

Mary Katherine Bryan
Ada Devendorf
Ernest Griswold Dudley
Effie Merle Ingels
James Ira Wilson McMurphy
Charles Shoemaker Morris
Everett Winder Rust

PHYSIOLOGY AND HISTOLOGY

Mary Caroline Baker
Burns Stoddard Chaffee
George Clifford Coe
Rudolph Alfred Kocher
Royce Reed Long
William Scott McKell
Harriet Elizabeth Twombly

ZOOLOGY

Marguerite Hyatt
Ernest Alexander McGregor
John Martin Miller
Ola Lois Rowell

ENTOMOLOGY

David Timmins Fullaway
Francis Xavier Williams

GEOLOGY AND MINING

Clayton Isaac Chandler
Arthur Dickinson Hughes
Joy Gilbert Jameson
George William McDaniel
Ralph John McFadden
Arthur Adelbert Mathewson
Basil Prescott
Clarence Luther Severy
Edgar Kirke Soper
Donald Steel

CIVIL ENGINEERING

Nelson K. Carpenter
Robert Bowman Chandler
Howard Foster Clark
Ernest Delevan Cole
*Harris DeHaven Connick
Ernest Lynn Coolidge
Russell Woodworth Cummins
Everett St. John Dunbar
Edward Aiken Flanders
James Calvin Foss, Jr.
Harold Johnson Heffron
Frederick William Herron
Jesse Blaine Holly
Edward Gwyn Sheibley
Jesse Winter Smith
Charles Arthur Strong
Burpee Ogilvie Webber

MECHANICAL ENGINEERING

Newton Dana Cook
William Frank Crane
Lewis Fred Halloran
Willis Wallace Jourdin
George M. Klein
Cecil Curtis McKay
Arthur Winfield Morehouse
Roger Topp

ELECTRICAL ENGINEERING

Earl Milton Baldwin
Ross Dudley Brackett
Milton Jay Brooks
John Emil Carpenter
Perry Orson Crawford
Louis Duzzett Farnsworth
Richard Fowler
William Samuel Johnson
Lawrence Monroe Klauber
John Andrew Koontz, Jr.
Taizo Mitoma
Albert Gifford Mott
Edward Jay Nash
Albert Henry Rosenberg
Alexander Augustus Terry
Maxwell Vestal

BACHELOR OF LAWS

Gilbert Dane Ferrell
Kirke Tonner Moore
Samuel Hatch Pierce

MASTER OF ARTS

GERMANIC LANGUAGES

Helena May Nye, Ph. B. (Marietta College).

ENGLISH

Alice Cecilia Cooper, A. B.

HISTORY

Mary Wilhelmine Williams, A. B.

ECONOMICS AND SOCIAL SCIENCE

Yamato Ichihashi, A. B.

PHYSICS

Shirley Hyatt, A. B.

PHYSIOLOGY AND HISTOLOGY

Olive Hornbrook MacFarland, A. B.

ZOOLOGY

Charles Victor Burke, A. B.
Rose Miriam Higley, A. B.

ENTOMOLOGY

Charles Piper Smith, B. S. (Purdue University).

ENGINEER

ELECTRICAL ENGINEERING

William Leavenworth Durand, A. B.
Cyril Frank Elwell, A. B.

JURIS DOCTOR

Charles Alexander Beardsley, A. B.
Jesse Eugene Campbell, A. B.
Harold Ide Cruzan, A. B.
Irving Deane Gibson, A. B.
Edward Royle Jackson, A. B.
Edward R. Milliken, A. B. (Pomona College).
Frank Swart, A. B.

THE MEMORIAL CHURCH

The Rev. David Charles Gardner, Chaplain.

Godfrey Carl Buehrer, Organist.

Pending the restoration of Memorial Church services are held in the University Chapel.

Special Preachers, 1908-09

September 13. The Rev. William Rader (Congregational), San Francisco.

October 11. The Rt. Rev. William Ford Nichols (Episcopal), San Francisco.

October 18. The Rev. Bp. Edwin Holt Hughes (Methodist), San Francisco.

November 1. The Rev. C. W. Merrill (Congregational), Saratoga.

November 15. The Rev. Edward Lambe Parsons (Episcopal), Berkeley.

November 29. President William W. Guth (Methodist), University of the Pacific.

December 13. Professor Charles F. Kent (Congregational), Yale University.

January 10. The Rev. D. M. Brookman (Episcopal), Los Angeles.

January 24. The Rev. Elwood Worcester (Episcopal), Boston, Mass.

February 14. The Rev. Joseph Henry Crooker (Unitarian), Boston, Mass.

February 28. The Rev. Matt Hughes (Methodist), Pasadena.

March 14. The Rabbi Bernard M. Kaplan (Hebrew), San Francisco.

March 21. The Rt. Rev. Bp. Paddock (Episcopal), Oregon.

April 4. Colonel Charles Miles (Salvation Army), San Francisco.

April 18. The Rev. Hugh Walker (Presbyterian), Los Angeles.

May 2. The Rev. Albert J. McCartney (Presbyterian), Sharon, Pa.

May 9. The Rev. J. Beveridge Lee, Presbyterian Secretary for Colleges, New York City.

May 16—Baccalaureate Sunday. The Rev. Bp. Edwin Holt Hughes (Methodist), San Francisco.

LECTURES, RECITALS, DEBATES, ETC.

Before the University

Professor Charles Moreau Harger, University of Kansas—*Modern Journalism.*

The Hon. Joseph C. Robertson, Glasgow, Scotland—*Men and Places in Scotland.*

Mr. Charlls H. Shinn, Washington, D. C.—*One of the Problems of our Present Government Policy on the National Forests.*

Dr. C. A. Hall, Victoria, B. C.—*Things That a College Man Should Know.*

Mr. G. O. Shields—*Wild Animals in their Native Haunts.*

The Hon. James Bryce, Ambassador to the United States from Great Britain—*General and Special Studies in Education.*

Musical Recitals, Etc.

1. Presentation of *The Egyptian Princess,* by the Shubert Club.
2. Presentation of George Bernard Shaw's *Arms and the Man,* by the English Club.
3. Presentation of *His Excellency the Governor,* by Sword and Sandals.
4. Concert by Mme. Gadski.
5. Presentation of Augustin Daly's Comedy, *7-20-8,* by the Sophomore Class.
6. Concert by David Bispham.
7. Presentation of the Junior Opera, *In Tangiers,* by the Junior Class.
8. Concert by Ossip Gabrilowitch.

University Assemblies

1. President David Starr Jordan, Professor John Caspar Branner, Mr. Almon Edward Roth.
2. Professor Burt Estes Howard—*The Power of Positive Convictions;* Mr. William Cortez Shelton.
3. Mr. Ng Poon Chew, San Francisco—*The Twentieth Century China and its Relation to America.*
4. The Rev. D. Ebina, Tokyo, Japan—*Vocations of Americans and Japanese.*
5. Mr. G. J. Griffith—*Needed Prison Reforms;* Mr. E. C. Mercer,
6. Mr. C. R. Ashbee, London, England—*Handicrafts and Socialism.*

7. Mr. Herbert C. Hoover, '95; Mr. Hugh A. Moran, '05—*Oxford Men;* Mr. G. O. Shields.

8. The Rev. Charles E. Dole, Jamaica Plains, Mass.—*Lessons from the Life of Abraham Lincoln.*

9. Sir Wilfred Grenfell, Labrador—*The Social Service Ideal;* Rev. Cecil Marrack, '01, San Francisco—*Social Service.*

10. President David Starr Jordan—*A Eulogy on Mrs. Stanford;* Professor Adolph C. Miller, University of California—*Ideals in Business Life.*

11. Dr. William Fitch Cheney, San Francisco—*Religion and Medicine.*

12. Mr. John Graham Brooks, Cambridge, Mass.—*The Race Problem in the United States.*

13. Mr. Hamilton Holt, of the New York *Independent*—*The Federation of the World.*

Commencement Addresses—May 20, 1908

Mr. Ernest Carroll Moore, Los Angeles—*What the University Requires.*

President David Starr Jordan—*To Know a Good Man When You See Him.*

The Bonnheim Ethical Dissertations and Discussion

The purpose of the Bonnheim dissertations and discussion, as defined by the founder, Mr. Albert Bonnheim, of Sacramento, is as follows: "It is not so much desired to obtain new facts or new truths in ethics as it is to place the truth which we now have before as many students as possible, so that they will take greater interest in questions dealing with ethical problems." The competition is open to all undergraduate students of Stanford University, and is divided into two parts:

1. *The Bonnheim Dissertations.*—The general regulations governing the competition are as follows: Each competitor must deposit with the Registrar before the first day of November an essay upon the subject assigned by the committee. The essays must not be signed, but should have some mark of identification and be accompanied by a sealed envelope containing the name of the author. They must be typewritten on thesis paper of regulation size. No limit of length is prescribed, but a treatment not to exceed ten thousand words is recommended. The judges will announce the names of the five competitors who present the best Bonnheim dissertations, awarding them premiums of $25 each. But no award will be made to any essay not deemed worthy of recognition.

2. *The Bonnheim Discussion.*—The winners of the Bonnheim premiums for dissertations shall be qualified to engage in the discussion, which will be upon the same subject as the dissertations, and which will be held the first or second week in December. The Bonnheim prize of $125 will be awarded to the speaker who in his discussion of the subject shows the clearest insight and makes the most effective presentation. Each speaker will be allowed twenty minutes.

The general subject for 1908 was "Ethical Aspects of the Doctrine that Great Commercial Nations Should Maintain Large Navies." The judges of the dissertations were Professor BURT ESTES HOWARD, the Rev. WALTER HAYES of Palo Alto, and Dr. SEDLEY LYNCH WARE; of the discussion, Professor JACOB NEIBERT BOWMAN, of the University of California, Mr. JOSEPH HUTCHINSON, of Palo Alto, and Professor ALLYN ABBOTT YOUNG. Premiums were awarded to JOHN DAVID HOUSER, JOHN RAYMOND TUTTLE, and WILLIAM PERRY MEALEY. The Bonnheim prize was won by JOHN DAVID HOUSER.

The general subject for 1909 is "Moral Aspects of Public *versus* Private Control of Utilities." The essays are due at the Registrar's Office, October 25. The judges will announce the Bonnheim premiums November 19, and the discussion will take place December 3.

INTERCOLLEGIATE DEBATE

An INTERCOLLEGIATE DEBATE, under the auspices of the Associated Students of the University of California and of the Leland Stanford Junior University, is held in April of each year. In 1909 the debate was held at the University of California.

The question for 1909 was, "Resolved, That our legislation should be shaped toward the gradual abandonment of the protective tariff."

The contestants were: JAMES ARTHUR BROOKMAN, CHAUNCEY FREESE ELDRIDGE, NEWTON BISHOP DRURY, of the University of California; and PAUL JAY BATKIN, GEOFFREY FRANCIS MORGAN, and ALLEN CLIFFORD STELLE, of Stanford.

The debate was won by the University of California.

CARNOT DEBATE

The Carnot Medal, presented by the Baron de Coubertin, for the purpose of encouraging the study and discussion, in California, of French history and politics, is awarded annually to the student who, in the opinion of the judges, proves himself the best debater in a contest held for the purpose between Stanford University and the University of California.

Under the rules of the contest a general subject for the debate was announced November 13, 1908, but the particular phase of the question, as embodied in a resolution, was not made known to the contestants until February 5, 1909, two hours before the time set for debate.

The general subject for 1908-09 was "France: Her Relation to her Colonies and Dependencies," and the particular question debated was, "*Resolved*, That France should enter into negotiations with England, looking toward the exchange of French Indo-China for the West African possessions of England." The debate was held at Stanford University, February 5, 1909. The contestants were Newton Bishop Drury, Hubert Don Hoover, Alfred Raymond Morgan, of the University of California; and De Estraye Cassell Boyd, James Errett Shelton, and Geoffrey Francis Morgan, of Stanford. The judges were the Rev. Bradford Leavitt, Mr. Samuel G. Tompkins, and Mr. Philip Bancroft. The medal was awarded to James Errett Shelton of Stanford University.

Philological Association

Professor John Ernst Matzke, President.
Assistant Professor Macy Millmore Skinner, Secretary.

The University Philological Association was organized September 17, 1892, for the purpose of reading and discussing results of scientific investigations in language and literature. The membership consists of the instructors and advanced students in the different language departments in the University. The regular time of meeting is the first Thursday of each academic month, excepting September, January, and May, at 2:30 p. m. The following papers were presented during the calendar year ending March, 1909.

April 23, 1908. Professor Ewald Flügel.—*Report on the Work of the Chaucer Lexicon.* Dr. Hersch Ram—*Genesis 31:29, yēsh be ēl yadî* (it is in the power of my hand).

October 1. Assistant Professor Colbert Searles *The Origin of the Quarrel of the Cid.*

November 5. Associate Professor Karl G. Rendtorff—*Gerhard Hauptmann's Kaiser Karls Geisel.*

December 3. Associate Professor Henry Winchester Rolfe—Some *Economic Facts which Help Explain the Greatness of Athens.* Assistant Professor Jefferson Elmore—*On a Usage of the Personal Pronouns in Plato.*

December 26. Special meeting. Professor GEORGE HEMPL presented and explained a number of Etruscan and other Old Italic (Sabellic, Venetic) inscriptions, which he had deciphered.

February 4. Professor JOHN ERNST MATZKE—*The Biography of the Troubadour Guilhem de Cabestaing.* Assistant Professor WILLIAM ALPHA COOPER—*Goethe's Quotation from Ulrich von Hutten in Dichtung und Wahrheit.*

March 4. Assistant Professor COLBERT SEARLES—*The Cid Before the French Academy.* Assistant Professor BENJAMIN OLIVER FOSTER—*An Interpretation of Propertius III, 24.*

THE SCIENCE ASSOCIATION

Professor FRANK MACE MCFARLAND, President.
Associate Professor SIDNEY DEAN TOWNLEY, Vice-President.
Assistant Professor JOHN OTTERBEIN SNYDER, Secretary.

The Science Association was organized January 17, 1894. Original investigations and papers of general interest on scientific topics are presented from time to time.

The following papers were read before the Association between April, 1908, and April, 1909:

Assistant Professor AUSTIN FLINT ROGERS—*Crystal Structure.*
Instructor JESSE DWIGHT SUTER—*On a Certain Class of Plane Curves.*
Professor GUIDO HUGO MARX—*Some University Trends.*
Professor JOHN CASPER BRANNER—*A Comparison of the Effects of the Earthquakes of Mendoza, Valparaiso, Jamaica, and San Francisco.*
Associate Professor FREDERICK JOHN ROGERS—*Some Experiments with a Shaking Machine.*
Associate Professor GEORGE JAMES PEIRCE—*Demonstration of a New Respiration Calorimeter.*
Associate Professor SIDNEY DEAN TOWNLEY—*The Shifting of the Axis of the Earth.*
Associate Professor WILLIAM FREEMAN SNOW—*Recent Movements in Public Health.*

UNDER THE AUSPICES OF THE CHRISTIAN ASSOCIATIONS

The Rev. WILLIAM T. PATCHELL, San Jose—*The Bible.*
Mr. E. C. MERCER, New York City—*College Men on the Bowery.*
Mr. E. C. CARTER, International Y. M. C. A. Secretary—*The Association in all Lands.*
Dr. C. A. HALL—Social Diseases.

Social Service Club

The Rev. D. Charles Gardner, President.
Helen Green, '10, Secretary.
George Barnard Bush, '09, Treasurer.

The Stanford Social Service Club was organized March 22, 1906, (1) to foster in the life of the University the ideals of social service, (2) to study social problems, social betterment, social settlements, and political science, and (3) to establish eventually a Stanford University Settlement, in San Francisco, and other centers of social work. University Assemblies have been held under the auspices of the Club, and in addition lectures and addresses have been given during 1908-1909, as follows:

The Rev. C. N. Lathrop, San Francisco—*Some Conditions in San Francisco.*
Mr. J. C. Astredo—*The Work of a Probation Officer in the Juvenile Court.*
The Rt. Rev. Bishop Paddock—*The Slums of New York.*
The Rev. Cecil Marrack, San Francisco—*Social Service in Cities.*
Sir Wilfred Grenfell—*Social Service in Labrador.*
Colonel Charles Miles, of the Salvation Army—*Practical Philanthropy.*

LELAND STANFORD JUNIOR MUSEUM

Harry C. Peterson, Curator.
E. G. McCann, Asst. Curator.
C. Williams, A. F. Meston, W. W. Adams, A. H. S. Chuck, Geo. Bevier, Jr., B. Kawakama, Assistants.

In 1880, Leland Stanford, Junior, then eleven years of age, accompanied his parents on a trip through Europe, and collected numerous mementoes of the places visited. In 1883, on a second trip he began to pursue this object more ambitiously, and finally with the idea of establishing a museum. The Leland Stanford Junior Museum was designed by Mrs. Stanford as a memorial to perpetuate this idea, and the various collections are mainly her gift to the Museum.

The main building is of Grecian architecture, built of concrete, and fireproof. The cornerstone was laid May 14, 1891, and the Museum opened to visitors in 1894. In 1899 and 1905 extensive additions to the original building were completed, making the available exhibition floor space at that time over 200,000 square feet, with 90,000 square feet for storage purposes.

The collection made by Leland Stanford, Junior, between 1880 and 1884, has been placed in two rooms (A and B), and in room A his own arrangement is reproduced in detail, including the labels written by himself. In the room adjoining (B) are found mementoes of his early life. These two rooms contain especially Egyptian bronzes, Tanagra figurines, Greek and Roman glass, armor, mosaics, Sèvres and Dresden ware, and the like.

The Memorial Room (O) was designed to contain personal mementoes of Senator and Mrs. Stanford. Here are found ancestral portraits of the Stanford and Lathrop families; two cases devoted to the Grant family collection; racing trophies; Muybridge's first photographs of "Animals in Motion," and subsequent works; the "Last Spike," and other historical relics of the Central Pacific Railroad; a large assortment of rare lace—Point, Alençon, Chantilly, Duchesse, Honiton, Valenciennes, and others; India shawls, fans, Worth dresses, antique jewelry, and European souvenirs.

The vestibule and upper corridor are devoted principally to statuary, old and rare books, papers, etc., including Duc de Loubat's famous reproductions of Aztec and Mexican manuscripts, a 16th century illuminated Turkish Koran of great value, Lord Kingsborough's "Antiquities of Mexico," and German engravings.

The Di Cesnola Collection (rooms C and E) contains five thousand pieces of Greek and Roman pottery and glass from the Island of Cyprus.

Room F contains a collection of Venetian glassware and chandeliers, mirrors, and mosaic art pieces, the gift of Messrs. Salviati & Camerino, of Venice, Italy.

Iridescent glass, Etruscan vases, Roman lamps, sculptured marble heads, and bas-reliefs of the first century were added by Mrs. Stanford.

The American collection (I) is made up of mound relics, Indian baskets, Acoma ware, utensils, Alaskan canoes, totem poles, etc. In this room is also a display of material of the stone age purchased by Mrs. Stanford in Denmark, as well as a collection of Samoan relics and war implements, given by President Jordan.

In the Chinese and Japanese room (K) there is a collection of bronzes, arms, china, lacquer, cabinets, musical instruments, rich embroideries, and specimens of wood-carving, including the Imperial bedroom set, a marvel in wood-carving and inlaid work.

The Hawaiian-Japanese collection, purchased by Mrs. Stanford in 1902, is rich in cloisonne, Satsuma, porcelain, embroideries, Buddhistic images, dwarf trees, and ivory carvings. The large bronze Koro, over 300 years old, is especially noteworthy. The Corean collection, the gift of Mr. Timothy Hopkins, contains costumes, household goods, cabinets, screens, etc. Mr. Hopkins has also placed in the Museum a collection of ancient and modern coins and medals.

The Fine Arts Collections (rooms P, Q, R, U, and V) include pictures by Meissonier, Bouvier, Bonnat, Richter, Carolus-Duran, Van Wyck, Bierstadt, Ch. Landelle, Courtois, Piot, Munier, Brozik, Ricci, Humphrey Moore, Porteilje, Bouvier, Bradford, E. Paoletti, Mazzoni, Keith, Hill, Charles Nahl, C. T. Wilson, and many others.

Room V contains the Anna Lathrop Hewes collection of paintings, statuary, mosaic, etc., and Room Q a collection of pictures in oil presented by Thomas Welton Stanford, of Australia. Ceramics collected by Mrs. Stanford include Sevres, Dresden, Royal Berlin, Persian, Pompadour crystal, Bohemian, and numerous other wares.

Through the courtesy of Wells, Fargo & Co., all gifts intended for the Museum will be transported free of charge over their lines, in shipments of fifty pounds or less, from railroad points in California, Oregon, and Nevada, if addressed to The Curator, Leland Stanford Junior Museum, Stanford University, California.

Pending the complete restoration of the Museum building, a temporary installation of exhibits has been made in the main portion.

ALUMNI ASSOCIATION

Organized June 15, 1892.

CONSTITUTION

(As amended May, 1908).

In order to promote the interests of the University, to secure unity among its graduates, and to foster an attachment to our *Alma Mater*, we do hereby constitute ourselves an association to be known as the Alumni Association of the Leland Stanford Junior University.

I. MEMBERSHIP

1. All persons who have received a degree from the Leland Stanford Junior University are members of this Association.

2. All members of the Faculty are honorary members of this Association.

II. OFFICERS

1. The officers of this Association shall be: (1) a President; (2) one Vice-President for each successive group of five classes (provided that when the last group shall number three classes it shall thereafter be entitled to a Vice-President; (3) a Secretary-Treasurer; (4) an Executive Committee consisting of the Secretary-Treasurer and four other elected members, one of whom shall be designated as Chairman, but the President shall not be a member of the Committee; and (5) an Advisory Board, consisting of the President, one representative elected by the graduating class for the term of one year, and nine elected members who shall be graduates of five years' standing, and who shall be elected for three year terms. At the first election held subsequent to the adoption of this section the nine elected members shall be divided into three groups, the three receiving the highest number of votes shall hold office for three years, the three receiving the next highest shall hold office for two years, and the remaining three shall hold office for one year. Thereafter at each annual meeting there shall be elected three members for terms of three years each. The Advisory Board shall elect its President and Secretary.

2. All other officers shall serve for one year or until their successors are elected.

III. DUTIES OF OFFICERS

1. It shall be the duty of the President to preside at all business

meetings of the Association, to deliver the President's address on Alumni Day, and to perform such other duties as usually belong to his office.

2. It shall be the duty of the Vice-Presidents, in the order of seniority of their groups, to preside in the absence of the President and to perform the other duties belonging to his office.

3. It shall be the duty of the Secretary-Treasurer to keep accurate minutes of the meetings of the Association and to act as Secretary of the Executive Committee, of which he shall be a member.

4. It shall also be the duty of the Secretary-Treasurer to have charge of the collection and disbursement of the funds of the Association.

5. The Secretary-Treasurer shall be allowed ten per cent of all dues or assessments collected, as compensation for his services.

6. It shall be the duty of the Executive Committee to arrange for the programme to be presented on Alumni Day; or any programme for other public occasions; to regulate the finances of the Association; to perform such other duties as may be imposed upon it; and to attend to all business of the Association not otherwise provided for.

7. It shall be the duty of the Advisory Board, when deemed advisable, to consult alumni, undergraduates, faculty, and trustees, and to make recommendations regarding the welfare of the University and of the Alumni Association.

IV. COMMITTEES

1. The President shall be ex-officio a member of all Committees, except the Executive Committee.

2. At each annual business meeting the President shall appoint a committee of two persons to audit the Treasurer's accounts.

V. ELECTIONS

1. The February issue of the *Alumnus* shall give notice of the annual nomination and election of officers of this Association. Said notice shall contain the names of the incumbent officers and shall indicate the hold-over members of the Advisory Board, and shall contain in full the provisions of this Constitution relating to nominations and elections.

2. Nominations in writing, signed by at least twenty members, shall be required for any nomination. Nominations shall be forwarded to the Secretary-Treasurer between the first day of February and the first day of April of each year. On or before the fifteenth day of April of each year, the Secretary-Treasurer shall mail to every member of this Association, whose address he knows, an official ballot containing all the nominations, with the addresses of the nominees and the number of

proposers of each, and said ballot shall be published in the May issue of the *Alumnus*.

3. Officers shall be elected at an annual election to be held at Stanford University on Alumni Day, between the hours of nine o'clock A. M., and twelve o'clock noon. The Executive Committee shall have charge of the election. The elector may cast a written ballot in person, or by mail addressed to the Secretary-Treasurer, marked "Ballot" and disclosing the sender's name, and enclosing a ballot in a plain envelope. Ballots so received shall be opened and cast only during the hours of election. The respective candidates receiving the highest number of votes shall be declared elected. A tie vote shall be decided by lot.

4. No one whose annual dues are in arrears for the current year shall be entitled to vote or to hold office.

VI. DUES

The dues of the Association shall be $1.25 per year for each member thereof, which amount shall include a subscription to the *Alumnus*.

VII. MEETINGS

Meetings of the Association may be called by the President or by petition of twenty members, said meetings to be held at Stanford University.

VIII. AMENDMENTS

Any proposition to alter or amend these Articles of Association must be proposed in writing, signed by twenty members, and submitted to the members by mail in printed form by the Secretary-Treasurer, and voted upon in the same manner as are nominations for officers, and adopted by a majority vote.

IX. FIRST ELECTION

For the purpose of putting this Constitution into effect the first election of officers under it shall be held by the members present at the meeting adopting it, and their election shall take the place in all respects, of a first vote by mail; provided, however, that the Advisory Board shall not be elected until 1909.

OFFICERS OF THE ASSOCIATION, 1908-09

President:—BENJAMIN PALMER OAKFORD, '02, LL. B., '03.

Vice-Presidents:—THOMAS GRAHAM CROTHERS, '92; HARRY JAMES EDWARDS, '01; GORDON WILLIAM EDWARDS, '05.

Secretary-Treasurer:—CHARLES FREDERICK WRIGHT, '96, A.M., '97.

Executive Committee:—HERBERT COFFIN JONES, '02, Chairman; DENNIS SEARLES, '95, FRANK RAYMOND DRAY, '95, WILLIAM HENRY THOMSON, '05, CHARLES FREDERICK WRIGHT, '96.

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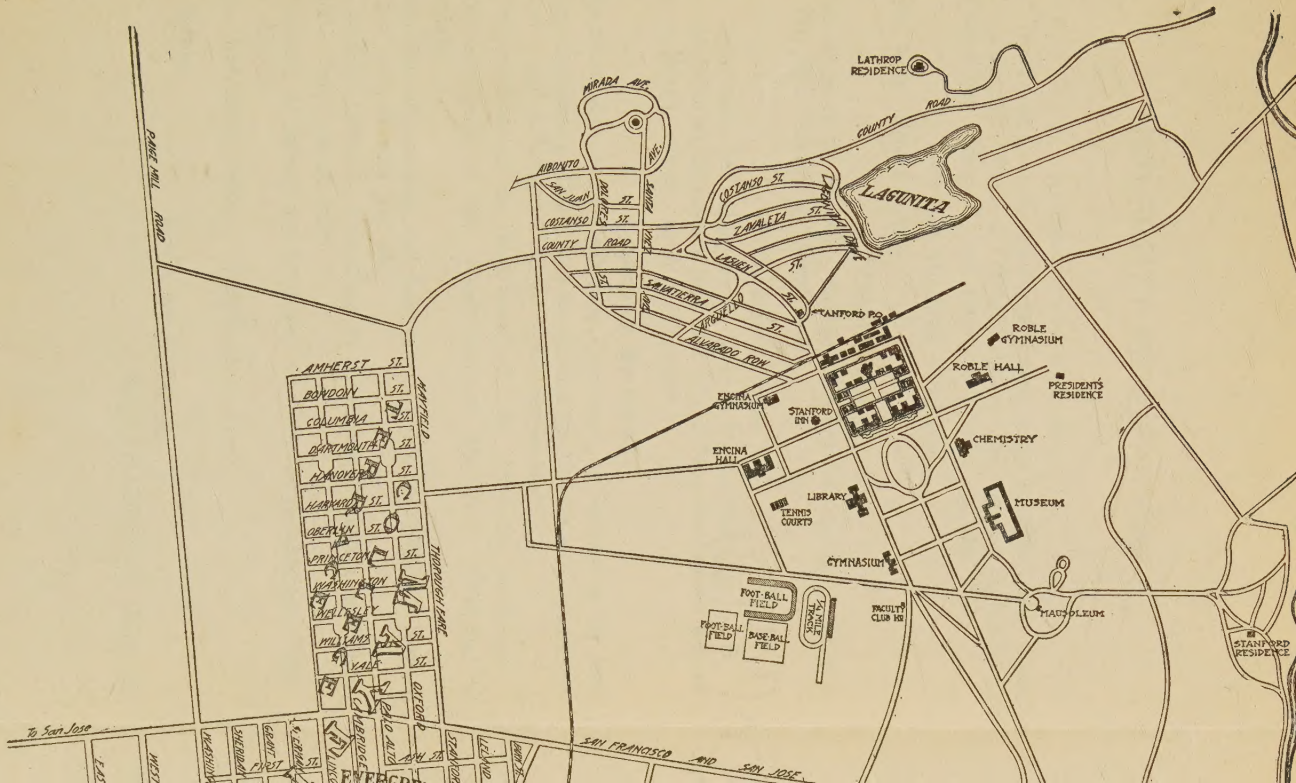
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CHEMISTRY
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LIBRARY
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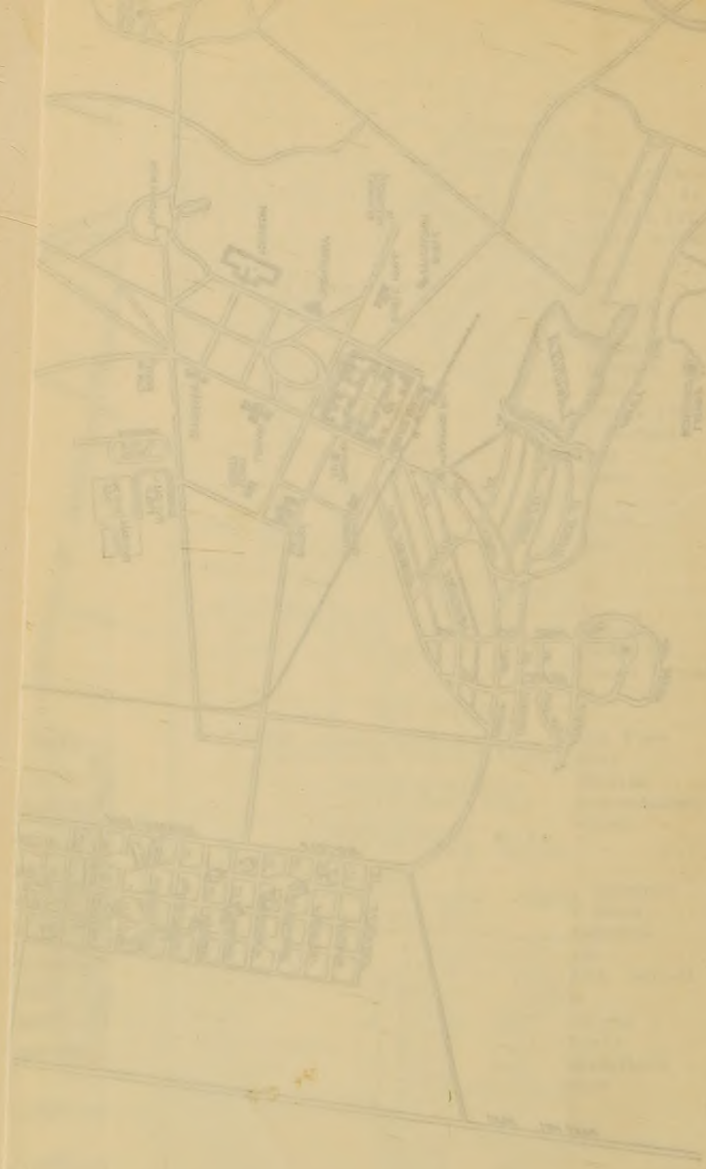

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Announcement of Courses of Instruction for 1909-10, with schedule of Lectures and Laboratory Work. Published in May.

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Schedule of Lectures and Laboratory Work for 1909-10. Revised edition ready August 30. 10c.

Admission Circular—Conditions of Admission, Residence, and Graduation. Published in April.

Directory of Officers and Students. Published in October and February. 15c.

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